

## **PROCESS OF CONSTRUCTION AND MODERNIZATION OF PUBLIC HEALTH FACILITIES IN A DEVELOPING COUNTRY.**

Sonia Cedrés de Bello

Universidad Central de Venezuela, Caracas, Venezuela.

### **SUMMARY**

The Ministry of Health in Venezuela is undergoing a process for modernization of the existing hospitals and improvement of the health services. This process is financially supported by international agencies such as the World Bank and the Interamerican Bank of Development., directed to complete the health care facilities network, specially by providing medical equipment. Besides there is going on a process of decentralization of the government functions, giving responsibilities to regional and local authorities including the planning, construction, and maintenance of the health care facilities, and establishment of a network of services. In this new situation the States are doing plans for evaluation, rehabilitation and construction of new facilities, but there is a lack of information, directions, methodologies and assistance from the central to the local level.

The University, through the Institute of Construction Technology, is doing studies to set patterns of evaluation, building requirements, and proposals of modernization of health facilities, in order to relocate, reuse or build new buildings to allow the new pieces of medical equipment for Treatment and Diagnosis, that involves the areas of high risk, high specialization and sophisticated technology.

**KEYWORDS:** health facilities; public buildings; developing country; evaluation; procedures; design regulations.

### **BACKGROUND**

In the last decade the Venezuelan Government has undertaken a construction plan of ambulatory health facilities that includes about 220 buildings, located in urban areas, that represents 30% of the total existing outpatient facilities, showing in table 1. In the sixties and seventies there were built the majority of the general hospitals. There are a total of 203 public hospitals ranging from 30 beds to 1000 beds, with a total of 40.000 beds, that represents 80 % of the total capacity, the rest represents the private sector. Table 2. All these buildings have been built on the base of standard plan type, been modified along the time by additions and remodeling.

Type	Direct coverage	Indirect coverage	N° facilities	Sub-total
Urban III	25.000 inh.	100.000 inh.	57	
Urban II	20.000 inh.	50.000 inh.	108	
Urban I	10.000-20.000 inh.	0	472	637 Urban
Rural II	< 1.000		579	
Rural I	> 1.000		2395	2974 Rurals
Total				3611

Table 1 Public ambulatory health facilities in Venezuela. 1990

Type	Capacity (n° beds)	Number
I	20 - 60	97
II	60 - 160	44
III	150 - 300	40
IV	< 300	22
Total		203

Table 2 Public hospitals in Venezuela. 1990

Recently, our hospitals are collapsed. They are fallen in problems of maintenance and financial support. We have a crisis given to the high prices of medicine, maintenance and salaries beside a bad administration. The new ambulatory facilities, have not filled the expectations, it is said that they have been a failure.

## PROCESS OF CONSTRUCTION IN THE PUBLIC SECTOR

The process of planning, design, construction and maintenance of health facilities, traditionally have been carried out by the Central Government, through the Ministries of Health and Public Works, with scarce or null participation of the States.

Nowadays, the Ministry of Health is undergoing a process for modernization of the existing hospitals and improvement of the ambulatory health services. This process is financially supported by international loans, through agencies such as the World Bank and the Interamerican Bank of Development. These loans are directed to complete the health care facilities network, specially by providing medical equipment and building maintenance.(1)

Besides, there is going on a process of decentralization of the government functions, giving responsibilities to regional and local authorities including the planning, construction, and maintenance of the health facilities, and the establishment of the network of services. With this scope the States are doing plans for remodeling, rehabilitation and modernization of buildings, through maintenance and purchasing of medical equipment, specially for Diagnosis and Treatment. (2)This situation has broaden the possibilities for participation of more professionals from the private sector, and regional areas, but there is a lack of information, directions, methodologies and assistance from the central to the local level.

The studies and projects in the area of health services, are dealing mainly with development of local systems, patterns of management of services but few in the aspects of design and building regulations.

In this situation there is the need to develop instruments and methodologies to analyze and evaluate the existing facilities, to make determination of needs, and accreditation of services. There is also the need to conduct researches that increase the basic knowledge and update the information about planning techniques and technologies, building requirements, medical services performance, and the process of building production as well, dealing with a mentality of "reduce, recycle and reuse", learning to do more with the available resources, which means identifying the real needs and carefully planning the programs and facilities to meet those needs. (3)

An official of the UK, Department of Health, has said that any country that has a substantial program of health building, would be unwise not to set national standards, and institute management and procedure controls into the program (4) In a WHO meeting on guidelines for developing countries, Dr. Nagasawa, from the University of Tokyo, has indicated that it is essential to upgrade the nation capabilities in planning, design and maintenance of health facilities; in this context the provision of guidelines for health facilities planning will facilitate to achieve the improvement of national capacity.(5) On the other hand, in the process of modernization of the Italian health structures, that began in 1990, they started by updating the building codes and regulations, in order to control the process (6)

## **EVALUATION STUDY ON AMBULATORY FACILITIES**

In an evaluation study done at the University, (7) in the recently built ambulatory facilities, it was detected the underutilization of their capacity, buildings finished without functioning for many years for lack of budget, and even others abandoned. Many others have changed uses, and are under remodeling to adapt the space to other uses that were not considered in the initial planning. These inadequacies are given by inadequate location, size and kind of building type or incomplete services. This has happened because the building was considered as an isolated structure and not as part of a network of services; also because of the use of building types plans, not adapted to local necessities of capacity, functions, programs, climate, and the connections with other services.

Recommendation were done in the following directions:

- Planning of the network of services in a geographical area, administratively decentralized.
- Increasing the utilization of full capacity of the existing facilities
- Planning should be conceived as an integrated procedure including: health programs, space programs, physical structure, financial support for construction and maintenance expenses, cost and benefit efficiency, construction by steps, planning the growth, with a mentality of long term and not only short terms.

With this results it is assumed that there should not be necessary to build more ambulatory care facilities, but increase the utilization of the existing ones, by changes in the programming, additioning more spaces and completing the medical equipment and services, by sharing them, in combination with the regional hospitals, in order to increase the population coverage.

## **APPROACH TO THE PROCESS OF MODERNIZATION OF HOSPITALS**

Programming is an activity that is assumed lightly, the practice more generalized consist in application of foreing models and typologies without doing a detailed analysis and adaptation to the particular reality.

The design of the areas that involves high technology and expensive pieces of equipment that implies, some times, risks of contamination of the environment and hazards to the users, should not be let to improvisation, it requires the knowledge from the field of architecture as well as the medicine.

Nowadays every process of health services is conceived attending concepts of efficiency. Which suppose the optimization of the available resources. The structural elements of any unit, define in great measure the simplicity or complexity of procedures that deal with good performance.

The Ministry of Health is in a process of reformulating, going through a stage of reduction of personnel, planning to become a technical agency that will give directions for, and evaluation of building projects design, in matter of norms and building regulations. In this situation the University, through the Institute of Construction Technology, is promoting to do jointly studies to set, update and adapt building requirements, and proposals of modernization of health facilities, in order to relocate, reuse or build new spaces in the buildings to allow the pieces of medical equipment for Treatment and Diagnosis, that involves the areas of high risk, high specialization and sophisticated technology.

These proposals are directed to:

- Produce guidelines for design and construction.
- Stablish methodologies for evaluation and modernization of the existing facilities, dealing to a process of categorization of services.
- Develop plans for building maintenance
- Organize workshops with the government agencies (central and local levels) and professional sector to recommend the use of guidelines, educational and planning instruments.
- To promote awareness in the authorities, of health facilities planning as a systematic process and the importance of multidisciplinary interactions in planning and decision making process between managers, planners, designers and users.
- Introduce this area of studies in the School of Architecture.

## REFERENCES

1. Ministerio de Sanidad y Asistencia Social. *Proyecto Salud*. MSAS-BID-BM. Caracas. 1992
2. **Arrieche, A. et al.** *Evaluación de las experiencias de descentralización y desconcentración del Sector Salud en Venezuela*. ILDIS-FUDECO-F. FAUS. Caracas, 1993.
3. **Adams, J.** *Beyond planning process*. Proceedings of the 12th. International Congress of Hospital Engineering. Bologna, Italy. May 25-29, 1992. pp. 15-17.
4. **Lamb, J.** *National standards in health buildings*. Proceedings of the 12th. International Congress of Hospital Engineering. Bologna, Italy. May 25-29, 1992. pp. 224-226.
5. **Nagasawa, Y.** *Forms of guideline. Experience in the Western Pacific Region*. Report on: Meeting on guidelines for health facilities planning. WHO. Buenos Aires, Argentina. May 17-22, 1992. Pp. 16.
6. **Marchesi, G.** *Quella struttura muta e grigia*. Rev. Tecnica ospedaliera. Marzo, 1992, pp. 6.
7. **Cedrés de Bello, S.** *Public outpatient services in Venezuela*. Proceedings of the 12th. International Congress of Hospital Engineering. Bologna, Italy. May 25-29, 1992. pp. 125-127.