A STUDY OF REHABILITATION NEEDS AT HILLCREST MEDICAL CENTER TULSA, OKLAHOMA

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ABSTRACT

This study was to determine the best system of rehabilitation services to be offered at the Hillcrest Medical Center rehabilitation unit, Tulsa, Oklahoma. The methods of research included personal observation; interviews with physicians, educators, and administrative personnel; and review of the literature. Demographic studies of the urbanized area to forecast patient load and economic status were completed to show a need for the service. Specific types of rehabilitation therapy already present were assessed, and how they could implement the proposed unit were reviewed. Staffing was discussed, and the incorporation of education was delineated.

The following services were recommended: physical therapy, occupational therapy, audiology and speech therapy, and inhalation therapy. An administrative section to include social service and controlled home care program was also recommended. The unit was to serve inpatients and outpatients.

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CHAPTER I

INTRODUCTION

General Information

Twenty-five years ago, there were minimal rehabilitation services in the United States. At the end of World War II, the government found itself with 265,000 servicemen disabled from combat injuries who received a great deal of publicity. But, when the little known fact that 1,250,000 civilians were disabled during the war years was realized through a burgeoning demand for rehabilitative services, a discrepancy in our health care program was recognized.[1]

The federal Hospital and Survey Act of 1946 (The Hill-Burton program) initially provided numerous facilities for only acute medical care. The realization that a patient suffering a long-term illness or disability did not need continuous medical care led to the 1954 amendments of the Hill-Burton program.[2] These amendments broadened the grants to authorize construction of nursing homes, rehabilitation centers, and chronic disease hospitals.

Rehabilitation facilities received a further boost when the Federal Community Health Services and Facilities Act of 1961 amended the definition of a rehabilitation facility so that outpatient services

could be included if they offered evaluation and treatment in the fields of psychological, social, or vocational rehabilitation.[3]

The types of rehabilitation facilities now eligible for construction with categorical grants-in-aid are:

1. Rehabilitation facilities in a hospital.
2. Separate rehabilitation facilities for inpatients and outpatients.
3. Separate rehabilitation services for outpatients only.
4. Single disability rehabilitation facilities. (The first three types of facilities are for multiple disability services.)

During the time that this legislation was being passed and the construction of facilities was being completed, the generation of patients continued apace. While 207,000 were rehabilitated in 1968 alone, some 300,000 new disabilities were reported. It is estimated that there is a 5,000,000-patient backlog awaiting services; and these services cover multiple disciplines.[4] Because of a deficiency in trained personnel, funds, and specialized treatment facilities, the hospital administrator must pay particular attention to this field.

While much of the work done has been under the aegis of federal government agencies, the need has also been recognized by voluntary agencies and national service agencies. The voluntary agencies are represented by different foundations, societies, and associations, such as the American Foundation for the Blind, American Cancer Society, and American Heart Association. The service agencies are represented by such groups as the American Medical Association, American Hospital Association, and National Rehabilitation Association. These agencies

have fostered planning groups, medical evaluation centers, educational programs, and research.

The list of disabilities that require rehabilitation includes: heart diseases, arthritis and rheumatism, mental and nervous disorders, high blood pressure, back and spine impairments, vision impairments, tuberculosis, asthma and hay fever, sinusitis or bronchitis, paralysis of extremities and/or trunk, absence of major extremities, hernia, stomach and intestinal ulcers, diabetes mellitus, hearing loss, speech impairment, and neoplastic disease. One can readily see that the number of services needed to combat this list can be extensive.

With this in mind, the specialty of rehabilitation has been classified in four general categories: medical services, social services, psychological services, and vocational services including re-education.[5] This study will take these categories and delineate the demands and the needs for therapy in this geographical region. This field of comprehensive health care is vital and projects a great saving to the community; each rehabilitated patient's cost alone is returned tenfold in tax payments and savings to himself and his family. As Dr. Grant says, "Rehabilitation adds years to life and life to one's years."[6]

Hospital Setting and History

After a twenty-year history as the Morningside Hospital, the Hillcrest Medical Center was incorporated in 1940. It is a nonprofit, voluntary civic institution that includes inpatient and outpatient care, research, and education. Ninety per cent of the four hundred practicing physicians in this area are staff members of Hillcrest.

The Tulsa metropolitan area is unique in that there is no county hospital. Therefore, the Hillcrest Medical Center serves a definite community need in providing services to lower income and indigent patients.

A long-range plan, covering the next twenty-five years, envisions an increase from 500 to 1,400 beds and the addition of a medical school. One part of its present facilities, the burn unit, is a product of regional medical planning. While it is housed at the Medical Center, the burn unit represents a cooperative effort of the other two general hospitals and the Children's Medical Center. The administrator of Hillcrest Medical Center now is a full voting member of the regional medical council, which recently employed a professional planner, full time.

Conditions Which Prompted the Study

The Hillcrest Medical Center recognizes its obligation to serve Tulsa in all its medical needs. Its stated philosophy is: "The Hillcrest Medical Center informs the individual citizen and takes the initiative to guard the health and furnish the services needed by the community." Along with its objectives of patient care, preventive medicine, education, and research, it is publicly on record "to offer rehabilitative services with a view to returning persons suffering illness or injury to an enriched and fulfilling life in their community." (Appendix A)

A study in 1963, substantiated by the Hillcrest medical staff, found that 200 beds could be used for the chronically ill or disabled patient. A pilot program in extended care, employing a unit which has

received accreditation by the Joint Committee for Hospital Accreditation, was initiated.[7] This unit, while only eighteen beds, developed criteria for admission standards, transfer agreements, and nursing policies and procedures.

Third-party agencies and state health department investigators certified the extended care facility to accept patients for insured hospitalization, including Medicare. The success of this unit has led the director of the hospital division of the state health department to refer to Hillcrest when guiding other hospitals in development of their programs.

An enlarged, 200-bed, extended care facility is included in the first stage of the Hillcrest Medical Center long-range plan and will house a rehabilitation unit that would satisfy Hillcrest's published objective. A new four-story building will have the 18,000 square feet rehabilitation unit on the first floor (Appendix B). The three floors above will be for inpatients of the extended care facility. Financing through government and private funds is assured, and start of construction is scheduled for mid-1970.

The administrative staff has the project site allocated and architect's plans roughly completed for the building. Because of the numerous services encompassing rehabilitation, the uncertain availability of patients, and the shortage of personnel resources, the administrator requested that a study be made of the services to be provided.

The Problem

Statement of the problem

The problem is to determine the best system of rehabilitation services to be offered at the Hillcrest Medical Center Rehabilitation Unit, Tulsa, Oklahoma.

Objectives

The objectives of this study will necessitate an analysis of needs generated by different classes of patients. From this, the types of disabilities within the area can be delineated and checked to see which services are presently available. Finally, if the service is needed, personnel, equipment, and funds must be evaluated to determine the advantages and the disadvantages of including a specific therapy capability within the scope of the rehabilitation unit.

Criteria

The recommended system should:

1. Recieve support from Medical Center surgical and internal medicine services.
2. Receive support from Medical Center laboratory, x-ray, pharmacy, and social service departments.
3. Provide training for professional and ancillary personnel.
4. Bring the handicapped person to the highest point of physical potential in relation to the specific disability involved.
5. Consider the total needs of the patient as the frame of reference for therapy: medical, psychological, social, and vocational.

6. Have a home care program to evaluate and promote each patient's training for independent living.

7. Cooperate actively with individuals, agencies, and institutions in research related to rehabilitation.

Factors bearing on the problem

While the first four factors bearing on the problem relate to accreditation by the Joint Commission on Hospital Accreditation, the last four factors stand out in all studies relating to planning and establishing rehabilitation units:

1. The rehabilitation unit is to operate as a nonprofit institution without limits as to race, color, and national origin.

2. The unit is also to be under a legal governing body with administration vested in a chief executive.

3. The rehabilitation unit is to have a program under the direction of a physician; have a twenty-four hour registered nurse coverage, and have an organization chart.

4. The service is to have a physical plant which will operate solely as a rehabilitation unit.

5. There is a sufficient number of patients in the Tulsa region who need rehabilitation services.

6. Physicians in the area recognize the need and will support the program with referrals.

7. There is a physiatrist for consultations and direction of ancillary personnel.

8. Hillcrest Medical Center has two Hill-Burton grants totaling $836,000 with which to initiate construction of the extended care facility (Appendix C).

Assumptions

The following assumptions have governed this study:

1. The present government and voluntary rehabilitation agencies will cooperate in referrals and staffing exchanges.

2. Pediatric rehabilitation patients will receive therapy at the Children's Medical Center.

3. Industrial accidents will normally be cared for in physician offices and not require rehabilitation services.

4. Training programs for graduate students in speech, hearing, and physical therapy will be initiated.

Definitions

Ancillary encompasses subordinate professional and nonprofessional types of services that furnish an auxiliary function to assist departments attaining their objectives.

Aphasia is a condition generally arising from a stroke that leaves one with an impairment or a loss of speech.

Audiology is the service of diagnosing and treating deficiencies in hearing and the results thereof, including the prescription of prostheses, lipreading, auditory training, and speech correction and development.

Chronic condition is an illness or a disability that has lasted more than three months.

Extended care facility provides services for a patient suffering a long-term illness or disability when he no longer needs daily doctor care or constant professional nursing.

Medical consultation is availability, on call, of appropriate medical specialists for consultation with medical personnel of the center on specific cases.

Medical supervision is actual direction and control on the premises of all medical aspects of the rehabilitation program by a physician licensed to practice medicine or surgery. It includes prescription for medical services and direction of medical therapies, such as physical and occupational therapy. Some few centers permit such supervision by a prescribing physician who is in the community but not on the premises.

Occupational therapy is the administration of medically prescribed activities utilizing creative, manual, and industrial arts, media, and techniques, designed to assist in the physical and the mental restoration of disabled persons. Registered occupational therapists provide the treatments.

Physical therapy is the administration of medically prescribed activities and procedures utilizing the restorative properties of physical agents and exercises to correct or alleviate disabilities resulting from neuromuscular or orthopedic dysfunction in order to develop the patient's functional capacities to the greatest degree possible. Registered physical therapists provide the treatments.

Prosthetics is the measuring, manufacturing, and the fitting of devices, such as limbs and braces, by prosthetists under medical supervision. Some, but not all, prosthetists in centers are certified.

Psychological evaluation is the service of a psychologist in testing and evaluating skills, aptitudes, interests, and other psychological factors in making an estimate of the disabled person's rehabilitation potential.

Rehabilitation is the process of reestablishment of the disabled person's capacity to sense and participate in his environment and to communicate with others; to adapt to the physical world, which includes ability to tolerate physical energy expenditure while resuming activities of daily living; and to utilize fully his intellectual, social, and vocational potentialities.

Rehabilitation facility is an administrative organizational entity in a prescribed physical locale that is established and operated for the specific purpose of providing one or more rehabilitative services.

Rehabilitation program encompasses broad plans of procedure initiated and carried out by groups of individuals concerned not directly with the details of rendering a service in some specific area of rehabilitation but rather with the planning and the organization incident to rehabilitation generally, either on a comprehensive or on a specialized basis.

Social evaluation is the collection of information of a social nature from the disabled person, his family, and others and the appraisal of such information to draw conclusions regarding the disabled person's rehabilitation potential.

Third-party payer is an agency which assumes financial responsibility for providing rehabilitation services to certain individuals.

Such an agency does not itself administer the rehabilitation services purchased. In the case of an insurance company, specific services may be purchased and payment may be on an indemnity basis, in which case a specified number of days of care within a maximun cost is provided.

Vocational evaluation is the process of collecting and appraising information on the disabled person's work history, his education, and his physical condition for the purpose of determining the possibilities of employment. The evaluation is performed by vocational counselors.

Research Methodology

This study began with visits to Bexar County Hospital, Santa Rosa Medical Center, and Brooke General Hospital. Bexar County Hospital has just finished a rehabilitation unit that has comprehensive services and training facilities. Santa Rosa Hospital is in the planning stage of a large rehabilitation unit that will be more medically than vocationally oriented. Brooke General Hospital has a functioning rehabilitation unit that is directed to the acute phases of care, since most of its patients are referred to the Veteran's Administration for complete recovery. Administrators in each of these facilities allowed the writer to study representative problems of rehabilitation units.

Two visits to the Hillcrest Medical Center, where the rehabilitation unit is to be built, were fruitful in gathering disease statistics. Interviews with directors of the Chamber of Commerce, the Tulsa Metropolitan Area Planning Commission helped in delineating demographic characteristics. The medical directors of large industrial firms and industrial clinics and the heads of hospital departments helped define patient needs, research projects, and educational programs.

Finally, Tulsa County Health Department and Tulsa University personnel were interviewed to observe specific resources that could implement the proposed unit. These visits included observations of facilities, equipment, and personnel as well as determining the availability of trainees for education and the availability of professional people for consultation.

Literature Review

Standard textbooks of rehabilitation provide the basis to study the historical development of this field. It is also here that the scope of the services offered can be fully appreciated. Different methods of treatment that relate to rehabilitation are completely defined, and a complete overview can be obtained.

Dr. Frank Krusen, whose efforts restored the Sister Kenney Institute to eminence after financial scandels almost ruined it, has two texts on rehabilitation. From these one can gain a knowledge of concepts and required therapy in all specific areas of the service.[8] Dr. Howard Rusk, an international rehabilitation consultant, is another author whose text covers the full scope of rehabilitation.[9]

Specific diseases afflicting large numbers of patients are discussed principally with rehabilitation in mind. Heart disease patients in the United States that needed therapy because of limited physical activity numbered 2,200,000 in 1960.[10] Arthritis and rheumatism patients at this same time totaled 2,400,000.[11] The objective of rehabilitation is to maximize the potentials of these disabled individuals for family and public daily living.

The periodical literature is a source of information governing specific and current fields within rehabilitation. War casualties are still a concern because of our involvement in Vietnam.[12] Newer concepts in the treatment of neurological,[13] cardiac,[14] speech,[15] and operative[16] patients are being presented. Failures in therapy[17] as well as advances in rehabilitation draw their share of literary evaluation.[18] Planning for new facilities[19] with guidelines in determining resources of money and critical personnel[20] are discussed to assist in establishing functional rehabilitation units. With a still emerging scientific service, there are numerous references to research programs in specific areas of rehabilitation.[21]

With the advent of government participation in planning, construction, and training for rehabilitation units, there is a large volume of committee studies, pamphlets, and regional publications that cover different aspects of the subject.[22] There is frequent third-party participation in the financing, staffing, and construction of these units.[23]

Footnotes

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CHAPTER II

DISCUSSION

Types of Patients and Their Needs

Planning

With the knowledge that some 400,000 disabled citizens live in Oklahoma, the governor of Oklahoma designated the vocational rehabilitation division of the state board of Oklahoma as the agency to perform statewide planning for rehabilitation. This project began in 1965 when the United States Congress authorized the Vocational Rehabilitation Act Amendments that gave specific grants for planning.[1]

The first step was to divide the state into ten geographical areas and to form area rehabilitation committees to study programs and needs for their specific areas. The overall designated purpose was to develop a program which would result in the development of comprehensive vocational rehabilitation services and to achieve a progressive development of these services in order to make them available to all handicapped individuals in Oklahoma by 1975.[2]

Area number one encompasses the urbanized area of Tulsa, and its planning under dynamic conditions has projected the availability of these services long before the deadline. Hillcrest Medical Center, with an assistant administrator for planning and a published list of

planning principles (Appendix D), meets honestly its philosophy and its objectives in regard to rehabilitation.

Misconceptions

This field of comprehensive health care has experienced an ever-expanding growth since World War II. In comparison to a specialty such as urology, which is mentioned in the Oath of Hippocrates, this is a short period of time. Consequently, misconceptions and unusual problems still plague rehabilitation.

This field is function oriented. It is not just interested in neuromuscular disorders but is also concerned with lung, heart, and emotional disorders. For example, heart attacks now have a low mortality, but medicine, in postponing death, must rehabilitate the patient to savor the complete triumph. While it is exemplary to restore the patient to his maximal level of performance, this can very well be at a lesser capacity than his former level. It is necessary to get him into the productive market and away from the seclusion of chronic invalidism. Rehabilitation is not a last resort measure but rather a part of a progressive regimen in patient care.

Another misconception is that this field is highly specialized--actually, all one needs is a therapist with interest, and many procedures can be instituted and followed on an outpatient basis. This provides a saving in finances, facilities, and personnel.

Population and economy

When the hospital was incorporated in 1940, the Tulsa Standard Metropolitan Statistical Area (SMSA) had a population of 290,368; it

now numbers over 487,000 (Appendix E). Of this, 390,000 are in the city of Tulsa, as of 1967, and a projected growth of 90,000 more is forecast for 1975. Future growth for the city was assured in 1966 when it tripled its incorporated area to 175 square miles by annexation.[3]

The area derives the major portion of its income from oil, aircraft services, and agriculture. The effective buying income is 7 per cent higher per capita than the national average.[4] Unions are present in the major industries and provide excellent health and welfare programs. While the greatest number of rehabilitation cases are generated by the patients themselves (industrial accidents and alcoholism),[5] there will be little demand developed in the industrial plants of Tulsa. As one local industrial physician said, "Most of the accidents are minor and [are] treated in the office; major ones end up at the undertaker--there is nothing in between."[6] Major plant medical directors agreed with him.

While this condition holds true now, the industrial economy of Tulsa is not static. Army engineers are beginning to provide a navigable waterway to the ocean which will affect many concerns and add many plants to the area. This economic potential will affect medicine as well and should be kept in mind for planning purposes.

Local patient load

The proposed rehabilitation unit at Hillcrest must look to fields other than industry for a patient load. Here the significance of an increasing aging population is important. It is the older age groups from which the great majority of patients will come. Current statistics

of the planning director reveal the following patient types suitable for rehabilitation in the district.

TABLE 1

PATIENT TYPES REQUIRING REHABILITATION IN THE DISTRICT

Patient Type	Number
Deaf	621
Limb impairments	6,094
Amputees	488
Psychiatric	4,043
Neuromuscular	460
Cardiac	966
Digestive	1,845
Speech	320

Source: Oklahoma, State Department of Health, Division of Vocational Rehabilitation, Comprehensive Statewide Planning for Vocational Rehabilitation Services (Oklahoma City: Division of Vocational Rehabilitation, June 30, 1968), n.p.

The Hillcrest Medical Center's 18-bed extended care facility operated at 96 per cent capacity in 1968. Its patient load by service was as shown in Table 2 below.

TABLE 2

PATIENT LOAD BY SERVICE

Service	Number
Medicine	71
Cardiology	13
Psychiatry	3
Surgery	35
Orthopedics	33
Urology	14

Source: Fred Taylor, Statistician, Hillcrest Medical Center, personal interview, Tulsa, Oklahoma, May, 1969.

With 200 extended care inpatients and an outpatient backlog numbering over 10,000, the rehabilitation unit is going to have a large number of different cases from which to draw. Edgar B. Porter has shown in a ten-year study that the trend line for rehabilitation work load parallels that for the total number of patients served.[7]

With an interested hospital staff whose 1963 survey indicated a need for 200 extended care beds, and a Medical Staff Committee to provide guidance in professional problems, availability of patients seems assured. Of the initial eighty physicians referring patients to the present extended care facility, 25 per cent were doctors who took most of their patients to other hospitals; this is additional evidence for success of the proposed rehabilitation unit.[8]

Full Scope of Rehabilitation

In the introduction, over twenty different accident disabilities and disease categories that will respond to some type of rehabilitation therapy were listed. These have been grouped into four components that are welded into a process when a disabled individual must have assistance to meet and solve rehabilitation problems beyond his personal capacities and beyond the services available in his usual daily experiences (Figure 1, page 21).

Medical services

Medical services include diagnosis and evaluation to determine potentials of remaining activity tolerance. Pre- and post-op breathing, coughing, and exercise activities are used actively and passively. Physical therapy and occupational therapy are prescribed to prevent

contractures and to achieve maximum independence in daily living. This service may include recreational therapy, speech therapy, audiological therapy, and prosthetic services.

Patient Needs	Program
Diagnosis	Medical and surgical services
Acute illness care	Doctors and nursing care
Extended care with:	
Restoration of function	Physical and occupational therapies; speech and hearing service
Psychological counseling	Psychiatric service
Recreation	Social service
Vocational and educational therapy	Special vocational service
Home care and reevaluation	Public Health Service Home Care Program

Fig. 1.--The Comprehensive Program

Social services

Social services include an evaluation of the patient, his family, and the neighborhood for restoration to his home in the community. The social worker counsels the patient and his family, communicates with other agencies, and provides finances for living and special services at home.

Psychological services

These services are generally closely related to medical services, especially in emotional trauma cases. The worker counsels the patient, tests his intelligence quotient, and evaluates the family's role in rehabilitation. Rehabilitation can be a long procedure at times, and the patient needs professional guidance when he becomes depressed.

Vocational and educational services

These services are generally for the younger age groups. They ascertain aptitudes and retraining potentials and provide teaching in specialized fields. Many younger people suffering disabilities and medical diseases use this branch of rehabilitation in gaining reemployment in jobs suitable to their capacities.

Physical therapy can be a service in any general hospital or outpatient clinic. Many industrial concerns use vocational evaluation and training in placement of employees. Many welfare agencies have social and psychological programs to aid and guide recipients of care. Still, rehabilitation is best accomplished by a separate unit which is within administrative and service functions of a general hospital center. Here roles can be identified, duplication and competition are minimized, and full scope of comprehensive health care can be maximally utilized.[9]

Present Regional Rehabilitation Services

Community agencies

With the scope of a comprehensive rehabilitation program reviewed in the previous chapter, let us now look at the present status of rehabilitation in the area. Statewide, and close to Tulsa, there are three rehabilitation facilities that are functioning and treating local patients now. Muskogee is the site of a large Veteran's Administration hospital that provides services in acute illness, outpatient care, and rehabilitation for veterans. The Veteran's Administration hospital has specific departments for spinal cord patients and amputees. The State Vocational

Rehabilitation Center at Okmulgee has an amputee clinic and other rehabilitation services as well. Most of the industrial accident cases are sent here when retraining in another job is needed; workmen's compensation insurance companies depend upon this facility for complicated cases.[10] Finally, at Norman, the state has a large mental hospital that has an active cerebral palsy clinic for child guidance and vocational training for retarded but trainable patients.

Within the Tulsa metropolitan area there is an active federal-state clinic financed from Office of Economic Opportunity funds. It has eleven full- and part-time professional personnel who provide home care, social service, psychological service and a physiotherapy department headed by a physiatrist who is active within the medical community on consultations.[11] He is proficient in electromyography which is used to evaluate future muscular capacities.

Tulsa University has a speech therapy department that is privately endowed and has a program leading to a Master's degree.[12] The facilities are more than adequate and provide all the necessary equipment to evaluate hearing loss as well. With four ear, nose, and throat specialists doing laryngectomies in the community, the case load for this specific field of rehabilitation is prospering.

Another community agency involved in rehabilitation is the Tulsa Recreation Center which principally assists the blind. It receives financial and personnel assistance from the state, and provides special aids, appliances, and training in community living. Through the combined efforts of the agency and Tulsa industry a successful privately owned broom factory now has fifteen blind employees.

As an adjunct service to rehabilitation, there are three brace and prosthetic shops in the city. Two of these are manned by certified prosthetic specialists, and the third is owned by a man who has the respect of referring physicians because he keeps abreast of modern developments in prosthetics.

Medical community services

Besides Hillcrest Medical Center, there are two other general hospitals and a children's medical center in the urbanized area. Of the two general hospitals, only one has an emergency room to handle indigents. Both of them offer physical therapy in conjunction with their medical services.[13] The Children's Medical Center is a completely separate facility organized to provide free or low cost consultive, diagnostic, treatment, and teaching services to emotionally disturbed, physically handicapped, and mentally retarded children.

Along with industrial clinics at the Douglas Aircraft and North American plants, there is one large private clinic in town offering complete services in physical medicine. Five other private physicians within the doctor community have practices oriented to taking care of industrial accidents.[14]

Hillcrest Medical Center services

The Hillcrest Medical Center offers emergency services and inpatient services for acute and extended care. There are full laboratory, x-ray, and pharmacy services available. The center has an active outpatient department for follow-up and diagnostic care. An endowed psychiatric foundation next door is operated as a separate

administrative unit. While this foundation offers outpatient and consultative services now, it will have inpatient beds next year and will qualify as a comprehensive mental health facility as outlined by federal planning policies.[15] Present rehabilitation services already represented within the medical center are:

1. Alcoholic detoxification unit.

2. Physiotherapy department with all modern modalities to give complete neuromuscular functional training, including preventive care on the ward to eliminate contractures and stasis lesions.

3. Inhalation therapy to alleviate respiratory distress for the outpatient and to train operative patients in deep breathing and coughing.

4. Rehabilitation nursing that gives education to medical and surgical patients on self-care--catheter maintenance, ambulatory exercises, special injection techniques for diabetics, and colostomy care.

5. Administrative departments, including social service workers for patient and family counseling.

6. Three active chaplains to allay the emotional trauma of patient and family.

7. A special committee representing medical and nursing staffs as well as involved ancillary personnel to evaluate extended care and rehabilitation policies and procedures.

Since the Children's Medical Center is oriented toward caring for children who are handicapped physically and emotionally, a service for acute pediatric diseases is needed. The Hillcrest Medical Center has such a department, and the employment of a full-time, board

certified pediatrician is contemplated to teach residents and evaluate patients for therapy or referral.

In fulfilling one of its basic functions as a general hospital and in accordance with its objectives, the Hillcrest Medical Center has a formal education program (Appendix A). This includes an internship program and residencies in medicine and administration. Nurses, librarians, and x-ray and medical technologists as well as surgical technicians are trained here. In order to continue this phase of its obligation, an active training cycle is being incorporated to give the rehabilitation unit help with its aphasics through use of Tulsa University speech department personnel. On-the-job training for physiotherapists from the University of Oklahoma in Oklahoma City is also an active program.

Medical planning council

Planning at Hillcrest Medical Center is an advanced administrative function that looks to comprehensive health care of the community as well as progress within the hospital itself. A long range plan that forecasts medical center objectives to the end of the century includes facilities designed by an architectural firm and a separate administrative department to obtain finances.

Tulsa is fortunate in having a regional medical council for planning which coordinates closely with the Tulsa Metropolitan Area Planning Commission. The regional medical council is made up of administrators from the hospitals and community health care agencies. The administrator of the Hillcrest Medical Center is a member of the council. He also has a full-time assistant administrator in his office to assist

him in hospital planning decisions and council recommendations. This council could well serve as a regional model in guiding the formation of other medical planning agencies.

Projected Rehabilitation Service

Needed change

At this point in the study, one can foresee that a definite need exists for the rehabilitation unit. What are the inadequacies in the present system? By answering this question, another step in developing the scope of services for the Hillcrest Medical Center rehabilitation unit will be accomplished.

With the projected increase to 200 beds in the extended care facility, there will be a definite need for an increase in amount of space required for physical therapy alone. There is no present area to use in training aphasics and postoperative laryngectomy patients. These people need quiet areas and special rooms, which can help audiological patients as well. Occupational therapy, which has so much concern in retraining for daily living, is without facilities. Occupational therapy is now one area that is active in research programs involving furniture design and domestic architecture. This program is especially important, along with physical therapy, because objective records can be maintained to guage a patient's progress. These evaluations give a better performance value than subjective clinical impressions.[16]

Rehabilitation center

Is it necessary to include all the services required for comprehensive rehabilitation? While this is an objective of the Hillcrest Medical Center, unnecessary duplication for the Tulsa area would result. The need for vocational rehabilitation will be minimal because there is now a total lack of patients in this field. Since the Children's Medical Center has a complete rehabilitation unit, the pediatric requirement will be minimized. The treatment of the alcoholic, drug addict and psychotic during the acute phase of illness can be dramatic; however, the rehabilitation period is long, expensive, and requires many specialized personnel. By referring patients to the already present psychiatric foundation for rehabilitation, economies will be gained by the Hillcrest Medical Center in space, personnel, and finances. National figures indicate a shortage of 1,500 physiatrists; 6,000 physical therapists; and 6,000 occupational therapists by 1970.[17] To include the full scope of rehabilitative services could very well pose a manpower shortage that would leave a rehabilitation center with insufficient personnel to run it.

Since the present services are inadequate and a comprehensive rehabilitation service is not needed, a modified program must be envisioned.

There is no immediate anticipated need for vocational, child, or psychiatric rehabilitation; therefore the proposed unit should be medically oriented in the broadest sense. This means physical and medical evaluation is usually performed by specialists in the areas of physical medicine, orthopedics, pediatrics, internal medicine, or

neurology. Acute illness or disability, no matter what its diagnosis, will be treated on the general medical and surgical wards. Physical, occupational, and inhalation therapy offer preventive medical benefits for the acutely ill. Prior to referral to an extended care facility or an outpatient service, the patient should receive social, economic, and psychological counseling and evaluation.

Facility and services

Comparative studies of rehabilitation units recently built in Evansville, Indiana; Seattle, Washington; and Charlottesville, Virginia; suggest that the space allocation at the Hillcrest Medical Center should be more than adequate (Appendix B).

Figure 2, page 30, lists the presently planned space, equipment, and building requirements. In these same categories, additional building features to be considered in final blueprints are also listed.

Staffing and education

These two subjects are dealt with together, because premium help is a product of an educational program within any type medical specialty. Talented students from the Tulsa University Master's degree program in speech therapy will greatly assist in staffing this department. The writer has observed that four or five trainees under adequate supervision will increase one graduate's patient load capacity two to five times, depending upon the programs in force.

For the projected rehabilitation unit, there is a physiatrist available for consultations. In the early phases of the unit's operation his part-time service will be adequate, but plans for a full-time

staff physiatrist to head the department should be considered to handle the projected patient load. The entire medical staff is available to assess functional capacities of any diseased organ system of the body.

Department	Programmed Facilities	Additional Features
Physical Therapy	Pool, exercise area, tank area, exercise cubicles, 40-inch doors, flush ramps and threshholds.	Rough usage walls, nonslip floors, overhead mooring devices.
Occupational Therapy	2500 square feet to teach daily living, crafts, and recreation.	Shielding for electromyography.
Speech and Audiology Therapy	Soundproof rooms for diagnosis, evaluation, and therapy.	
Inhalation Therapy	Two treatment rooms for positive pressure breathing.	
Administrative and Social Service	Waiting room, toilets, storage areas, staff offices, air conditioning, prosthetic shop.	Consultation rooms for social service department.

Fig. 2.--The Projected Program

Rehabilitation nursing is present in the extended care facility, and a training and recruitment program is planned for the expanded service. Social service is part of the present administrative services and will be used to evaluate the family and patients for the proposed unit.

The one area where definite recruitment is necessary is in the proposed occupational therapy department. There are presently no occupational therapists available in Tulsa for employment. Because many

of the functions of locomotion are taught by this service, it is vital to a medically oriented rehabilitation unit.

Finally an organization chart for this specific unit is needed. Even if there appears to be sufficient personnel, authority and responsibility should be assigned.

Sample case

With the preceding overview of the proposed facilities, services, and staffing for the projected rehabilitation unit firmly in mind, let us follow a theoretical case through the Hillcrest Medical Center that is admitted from the emergency room.

Harry Horton, 57-year-old right-handed security guard at the Forsyth Oil Refinery is admitted with multiple gunshot wounds suffered while attempting to foil a robbery at a drug store. The postoperative surgical diagnosis is:

1. Gunshot wound, base of left neck, with brachial plexus contusion and partial paralysis of left arm.

2. Through-and-through gunshot wounds: (1) abdomen, left upper quadrant and (2) mid-suprapubic right hypochondric area with bladder contusion.

3. Two gunshot wounds in right thigh, with femoral nerve contusion and right foot drop.

The wounds are debrided, drained, and dressed, and the patient is sent to the recovery room for observation. He is transferred to a surgical ward when vital signs are stabilized. There are intravenous tubes running; a stomach tube and a catheter are in place. Within twenty-four hours, rehabilitation begins: physical therapy to his

impaired limbs to prevent contractures and inhalation therapy to prevent atelectasis and stasis pneumonia. Social service has already advised the patient's insurance company of the diagnosis, prognosis, and contemplated therapy. After he is ambulant, he can be transferred to the extended care facility; at this time, he should not need the intravenous or the stomach tube. The catheter can remain in place, and the patient can move freely with it clamped. Secondary wound closure can be accomplished at any time.

Encouragement of the patient and family is needed at this time for emotional stability. The proposed therapy and prognosis should be presented in optimistic terms to prevent a neurotic depression. A depression can give the patient an improper attitude toward rehabilitation and lead to thoughts of litigation. An anticipated reward from a law suit quite often leads to improper motivation for recovery.[18] However, in most instances, a patient is anxious to return to his normal daily living, and optimistic encouragement is all that is needed for full recovery.

Whether an outpatient or an inpatient, the individual now receives active and passive muscle stimulation to prevent atrophy. If he were a stroke patient with aphasia, speech therapy would begin as well. Home care can be evaluated by nurses from the Public Health Service. They can also encourage mobility in dressing, moving, and bathroom care. As an outpatient, medical evaluation of progress will be assured by consultation with professional specialties.

With this type of comprehensive health care, which will be given at the Hillcrest Medical Center, medical care goes beyond saving lives.

Here, patients will be returned to the community to lead an active family, social, and economical life.

Summary

In order to have a rehabilitation service, a patient load is needed. A survey of the Tulsa urbanized area as to population and economic level was reviewed. With a backlog of over 10,000 disabled patients in the area, plus referrals from a proposed 200 bed extended care facility, a need for a rehabilitation service was determined.

It was pointed out that rehabilitation is not a last resort, but rather a part of a progressive regimen in patient care. Likewise, it is not a highly specialized field, but one that benefits and encourages the patient when an interested therapist is present.

A comprehensive rehabilitation center needs a medical service, social service, psychological service, and a vocational and educational service. Services present in the surrounding Tulsa area include vocational rehabilitation, a cerebral palsy clinic, and a veteran's amputee clinic. The metropolitan area of Tulsa provides rehabilitation for the blind, children, and psychiatric patient.

Present services at the Hillcrest Medical Center include physiotherapy, inhalation therapy, social service, and rehabilitation nursing. To provide services comparable to a rehabilitation center would be duplicating local therapies in pediatrics, psychiatry, and vocational services. With the projected patient load a modified rehabilitation service is needed at the Hillcrest Medical Center.

This service should include occupational therapy, speech and hearing therapy, psychosocial service, inhalation therapy, and an

expanded physiotherapy department to handle inpatient as well as outpatient referrals. A definite need for occupational therapists was discussed.

Finally a theoretical patient with multiple wounds amenable to acute, extended, and rehabilitative care was processed through Hillcrest Medical Center to demonstrate the value of implementing the proposed rehabilitation unit with the described services.

Footnotes

[1]Oklahoma, State Department of Health, Division of Vocational Rehabilitation, Comprehensive Statewide Planning for Vocational Rehabilitation Services (Oklahoma City: Division of Vocational Rehabilitation, June 30, 1968), n.p.

[2]Ibid.

[3]Oklahoma, Tulsa Chamber of Commerce, Business Research Department, Economic Profile of Tulsa: 1958-1967--Ten Years of Progress (Tulsa: Tulsa Chamber of Commerce, n.d.), n.p.

[4]Ibid.

[5]Dr. Nevin W. Dodd, Medical Director, American Airlines, personal interview, Tulsa, Oklahoma, February, 1969.

[6]Dr. William G. Mays, Industrial Medicine Department, Nelson-Glass Clinic, personal interview, Tulsa, Oklahoma, February, 1969.

[7]Edgar B. Porter, "Programs-Professions-People," Journal of Rehabilitation, XXXV, No. 2 (March-April, 1968), 11.

[8]Hillcrest Medical Center, Tulsa, Oklahoma, "Extended Care Report, Hillcrest Medical Center," March 31, 1968. (Mimeographed.)

[9]American Hospital Association, Rehabilitation Services in Hospitals and Related Facilities, p. 47.

[10]Dr. Nolan C. Riley, Medical Director, Douglas Aircraft, personal interview, Tulsa, Oklahoma, February, 1969.

[11]Dr. Willard B. Fields, Physiatrist, Tulsa City-County Health Department, personal interview, Tulsa, Oklahoma, May, 1969.

[12]Ibid.

[13]Dr. Nevin W. Dodd, Medical Director, American Airlines, personal interview, Tulsa, Oklahoma, Feburary, 1969.

[14]Dr. William G. Mays, Industrial Medicine Department, Nelson-Glass Clinic, personal interview, Tulsa, Oklahoma, February, 1969.

[15]American Hospital Association, Standards Manual for Rehabilitation Facilities Accreditation, p. 17.

[16]P. J. R. Nichols, "The Place of Paramedical Personnel in Clinical Research," Annals of Physical Medicine, X, No. 1 (February, 1969), 7-12.

[17]Paul M. Ellwood, Jr., "Can We Afford so Many Rehabilitation Professionals?," Journal of Rehabilitation, XXXIV, No. 3 (May-June, 1968), 20.

[18]John R. Barry and Michael R. Malinovsky, Client Motivation for Rehabilitation: A Review (Gainesville: University of Florida Press, 1965), p. 6.

CHAPTER III

CONCLUSION

Conclusions

The best system of rehabilitation services to be offered at the Hillcrest Medical Center rehabilitation unit, Tulsa, Oklahoma, should include:

1. Medical diagnosis and evaluation.
2. Physical therapy.
3. Occupational therapy.
4. Audiology and speech therapy.
5. Inhalation therapy.
6. Psychosocial service.
7. Home care referral service to Tulsa City-County Health Department, for rehabilitative nursing follow-up.
8. Paramedical education for undergraduate and graduate students in physiotherapy and speech therapy.

Recommendations

It is recommended that the Hillcrest Medical Center:

1. Continue present building plans for the proposed extended care facility with the projected rehabilitation unit.
2. Insure medical direction of the unit by a contractural agreement with a physiatrist.

3. Recruit or train nurses that will provide services in the extended care facility.

4. Develop an organizational chart to facilitate staffing, delegation of authority and definition of responsibility.

5. Publicize the proposed unit and services to be offered at medical staff meetings to insure referrals and consultations from the different specialties.

6. Alert the medical center laboratory, x-ray, pharmacy, and social service departments to the future increase in patient load.

7. Advertise for and actively recruit occupational therapists.

8. Formalize an agreement with the University of Oklahoma for training of physiotherapists on an increased basis.

9. Negotiate for the services of health department nurses for the home care program.

10. Invite individuals, agencies, and institutions to use the proposed facility for approved research programs in rehabilitation.

11. Refer patients with specific diseases to the presently functioning blind, psychiatric, children, and vocational training services in the area.

APPENDIX A

PHILOSOPHY AND OBJECTIVES OF THE HILLCREST MEDICAL CENTER

PHILOSOPHY OF THE HILLCREST MEDICAL CENTER

Hillcrest Medical Center is sensitive to the health needs of the Tulsa community and responds to its obligation to serve as a community health center. The center employs and affiliates with experts in all health disciplines. It excels in medical competence and integrity, ever mindful of the individual it serves. Through continuing study of community health needs, Hillcrest Medical Center informs the individual citizen and takes the initiative to guard the health of and furnish the services needed by the community to which Hillcrest belongs.

Source: Leaflet, Hillcrest Medical Center, Tulsa, Oklahoma, n.d.

OBJECTIVES OF HILLCREST MEDICAL CENTER

1. To render the best possible treatment to the sick and injured who come to Hillcrest Medical Center for care; to do this by considering the needs of the whole man in every dimension of life: physical, mental, and spiritual.

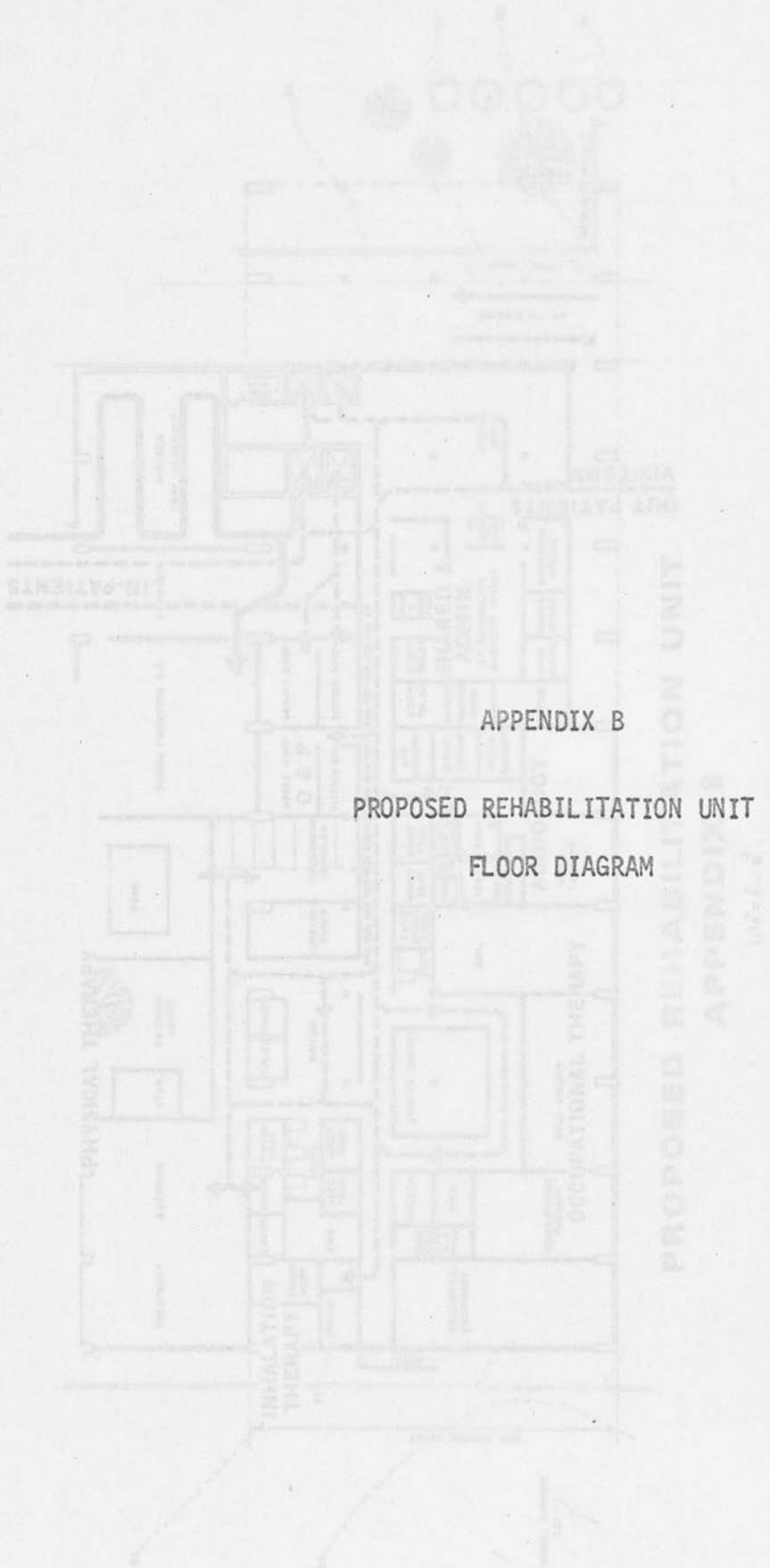
2. To teach patients ways and means of preventing further illness and injury; to employ modern techniques of disease and accident prevention and to promote preventive medicine programs within the community.

3. To train and educate persons in as many health professions and occupations as its resources permit; to cooperate with other health and educational institutions in training and educating persons for health professions and occupations; to engage in and cooperate with programs whose purpose it is to deal with and inform the public at large on matters pertaining to individual and public health.

4. To accomplish research related in any manner to maintenance and improvement of health; to cooperate actively with individuals, agencies, and institutions in research related to health.

5. To offer rehabilitative services with a view to returning persons suffering illness or injury to an enriched and fulfilling life in his community.

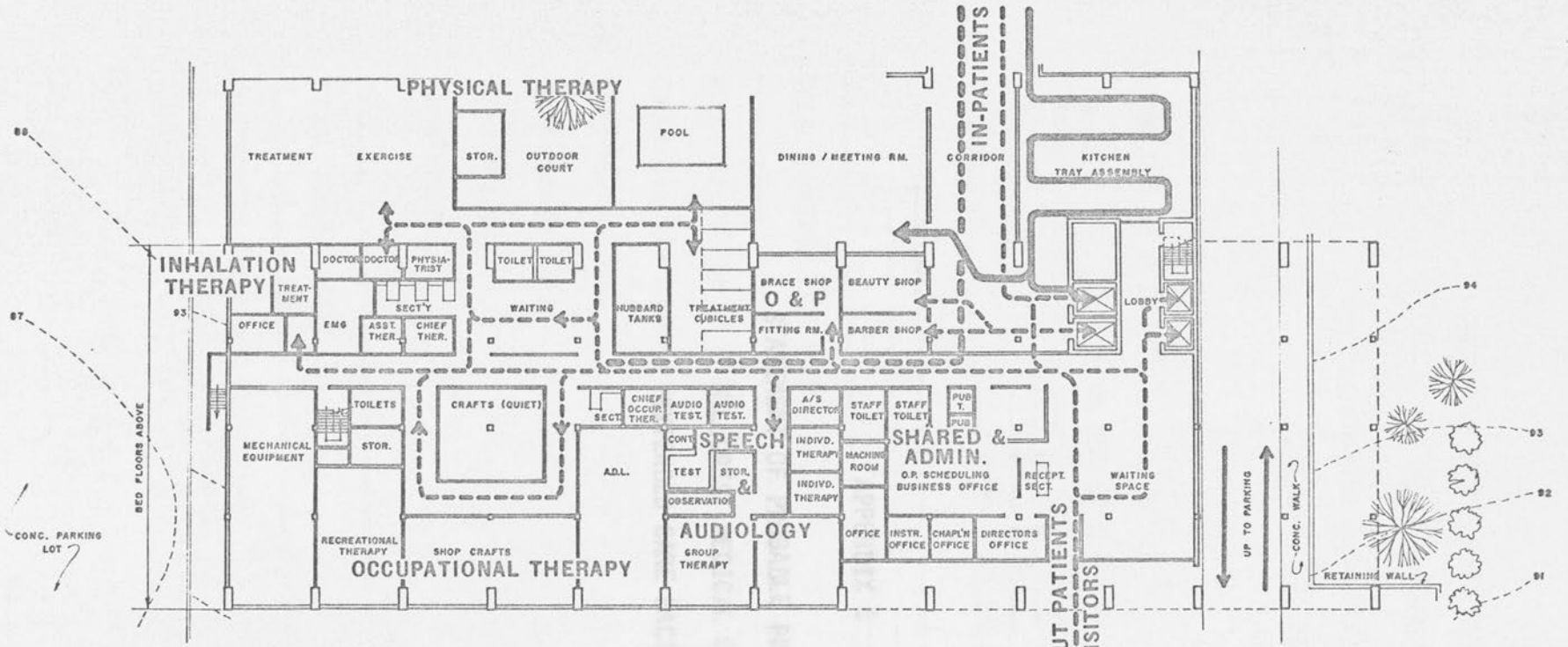
Source: Leaflet, Hillcrest Medical Center, Tulsa, Oklahoma, n.d.



APPENDIX B

PROPOSED REHABILITATION UNIT

FLOOR DIAGRAM



PROPOSED REHABILITATION UNIT

APPENDIX B

1/16" = 1' – 0"

APPENDIX C

STATEMENT OF PROBABLE PROJECT COST,

HILLCREST MEDICAL CENTER,

EXTENDED CARE FACILITY

STATEMENT OF PROBABLE PROJECT COST

Figures From
Hillcrest Medical Center
Extended Care Facility

December 27, 1968

Building		
105,000 SF @ 34.50		3,544,000
Beds	60,000 SF @ 40.00	2,400,000
Rehab. Unfinished	18,000 SF @ 15.00	270,000
Central	12,600 SF @ 30.00	378,000
Covered Area	4,000 SF @ 20.00	80,000
Penthouse	10,400 SF @ 40.00	416,000
Site Development		90,000
TOTAL CONSTRUCTION COST		$3,634,000
Architect's Fee (6.25%)		227,000
Group II, III Equipment		200,000
Land Acquisition		56,000
Contingency (5%)		182,000
Soil Analysis		4,000
Demolition		10,000
TOTAL PROJECT COST		$4,313,000
ALTERNATE: Deduct 1 Bed Floor		800,000
Deduct 2 Bed Floors		1,600,000

APPENDIX D

PRINCIPLES OF PLANNING, HILLCREST MEDICAL CENTER

PRINCIPLES OF PLANNING

1. Regional planning is the areawide counterpart of good institutional management.

2. Each health facility should be established, modernized, or expanded only in relation to proven community need for service, education, and/or research and not based upon the history and the aspirations of the institution.

3. Each health facility should plan by identifying primary and secondary service areas which it intends to serve and which may include and/or be shared with other institutions.

4. Each "general" hospital should serve as a center for comprehensive health services through a combination of direct provision of services and coordination with other agencies and institutions.

5. Each health facility should plan for the provision of services sufficient in volume and scope to assure the achievement of high professional standards, reasonable costs, and effective management. The adequacy of the volume and the scope must be determined in relation to the location of the institution and its service areas.

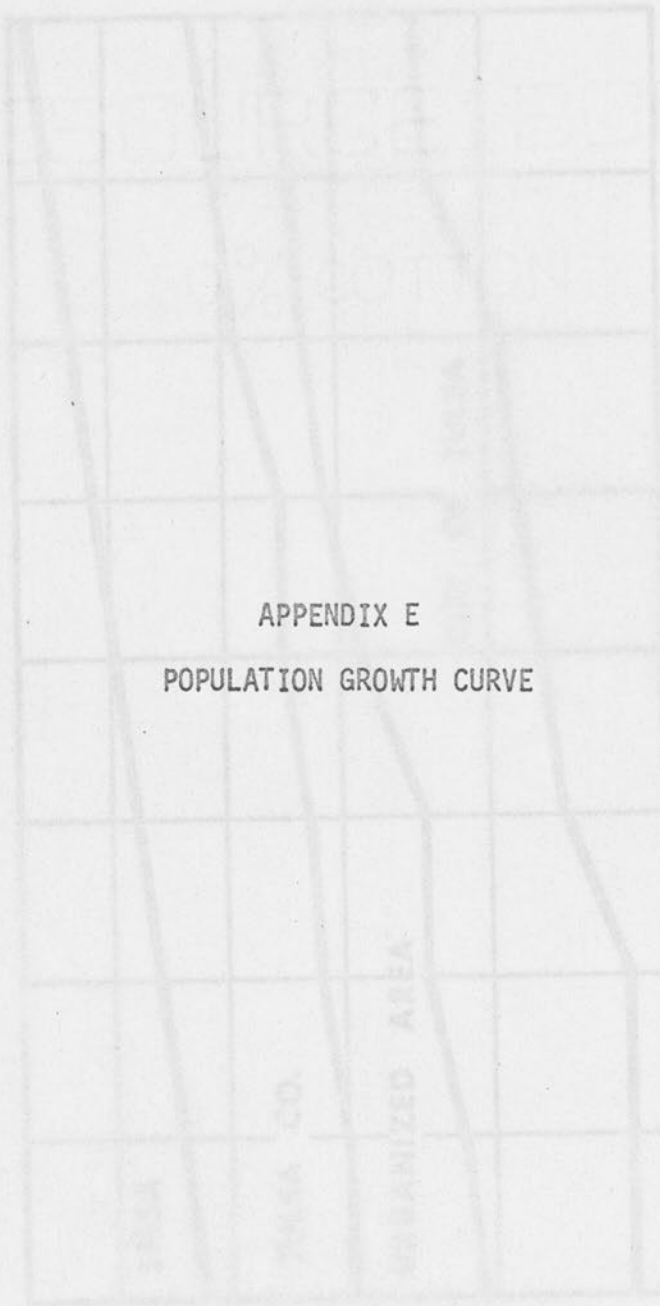
6. Facility design and administrative policies should consider needs of individual patients or patient groups. For general hospitals, this would include provision, supervision, or arrangement for services in rehabilitation, mental health, institutional care of the chronically

ill, home care, emergency and ambulatory care for all economic groups, and social service.

7. Health facilities planning for space and personnel must take into consideration the functional program of the entire institution when planning for each individual activity.

8. Each health facility should assume responsibility for developing a coordinated plan to create public awareness and understanding of its programs of patient care, education, and research.

Source: Leaflet, Hillcrest Medical Center, Tulsa, Oklahoma, n.d.

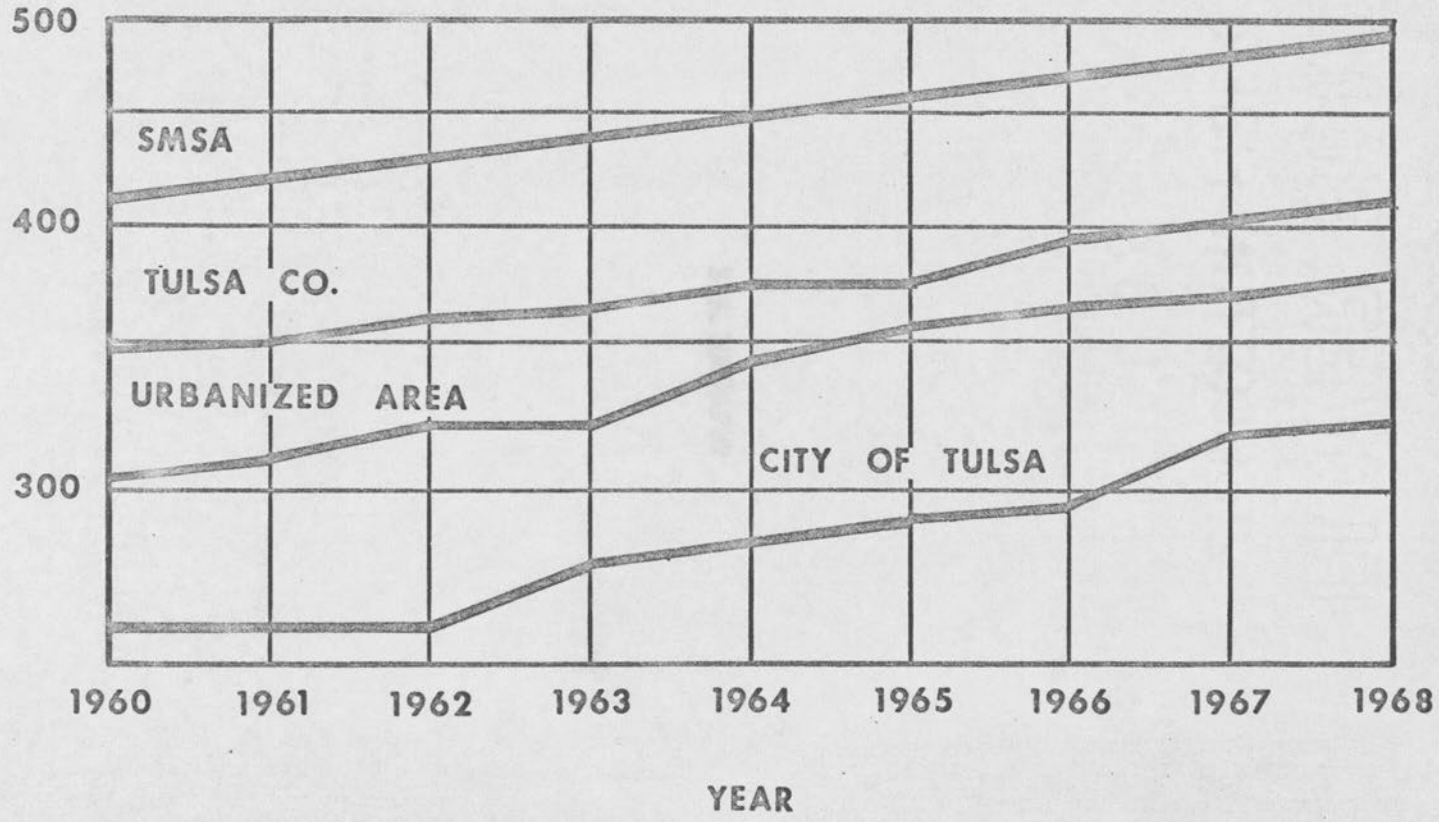


APPENDIX E

POPULATION GROWTH CURVE

APPENDIX E

POPULATION BY YEAR
FOR SELECTED AREAS AND TOWNS



SMSA = STANDARD METROPOLITAN STATISTICAL AREA

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Dr. Authur E. Grant, Chairman, Department of Rehabilitation, Bexar County Hospital. San Antonio, Texas. February, April, 1969.

Dr. William G. Mays, Industrial Medicine Department, Nelson-Glass Clinic. Tulsa, Oklahoma. February, 1969.

Dr. Nolan C. Riley, Medical Director, Douglas Aircraft. Tulsa, Oklahoma. February, 1969.

BIOGRAPHICAL SKETCH

LTC Richard Myhre Adams [redacted]. He received an A.B. degree from San Diego State College, June, 1950, and a M.D. degree from University of Southern California, March, 1954. After interning at San Diego County Hospital and receiving nine months of pediatric training at Los Angeles Children's Hospital, he had a general practice in Indio, California, for ten years. The last two years in private practice found Dr. Adams serving as chief of staff of Valley Memorial Hospital, the local general voluntary community hospital. LTC Adams' first military service was in the California Army National Guard in 1936. He served in the Army Air Corps in World War II in various enlisted specialties and saw service in North Africa, India, Burma, and Thailand. He was commissioned in the Army National Guard in 1956 and served as battalion and brigade surgeon in the 40th Armored Division. His present active duty dates from 1965. From December, 1966 to July 1968 he was in Vietnam as 9th Medical Battalion commanding officer, 9th Infantry Division surgeon, and II Field Force surgeon. He served another tour in the Republic of Vietnam after finishing the Health Care Administration Course, U. S. Army Medical Field Service School, Fort Sam Houston, Texas, in June, 1969.