A STUDY TO DETERMINE WHAT REHABILITATION SERVICES ARE NEEDED TO SUPPORT A DEMONSTRATION STROKE CARE UNIT AT SAINT JOSEPH HOSPITAL

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FOREWARD

Seventy-nine years ago the Sisters of Charity of the Incarnate Word came to Fort Worth, Texas, to establish this community's first hospital. Since that time, through a series of expansion programs, Saint Joseph Hospital has grown from its original 60 beds to the modern multi-million dollar medical facility of 480 beds that exists today. The expansion programs were undertaken in the same spirit that first brought the Sisters to Fort Worth, namely, the desire to provide service to meet the needs of a growing community.

Once again, the pioneering spirit of the Sisters has led to the seeking of yet new ways in which to improve the care provided the citizens of the community. It is this type of continuous growth that provides the background for this particular study.

The author is grateful to Sister Mary James, Administrator of Saint Joseph Hospital, for her invaluable assistance in this project and to Mr. Charles D. Maguire, Assistant Administrator of Saint Joseph Hospital, for his guidance during the early phases of this report.

Special gratitude is expressed to Dr. Arthur P. Grant, Professor of Physical Medicine and Rehabilitation, University of Texas Medical School, San Antonio, Texas, for his interest and counsel in the initial phases of this study and to Mr. Robert L. English, Executive Director, Texas Hospital Association, who was instrumental in providing pertinent research material for inclusion in this study.

TABLE OF CONTENTS

		Page
FOREWARD		ii
LIST OF TABLES		v
LIST OF ILLUSTRATIONS		vii
Chapter		
I.	INTRODUCTION	1
	General Information	1
	The Hospital Setting and History	3
	Conditions Which Prompted the Study	5
	Statement of the Problem	7
	Objectives	7
	Definition of Terms	8
	Criteria	10
	Limitations	10
	Factors Bearing on the Problem	11
	Assumptions	12
	Research Methodology	13
	Literature Review	15
II.	DISCUSSION	21
	The Rehabilitation Needs of the Stroke Patient	21
	Impact of Medicare	25
	A Profile of the Stroke Patient at St. Joseph Hospital	25
	Status of the Current Rehabilitation Program at St. Joseph Hospital	29
	The Rehabilitation Program in the Community	32
	The Rehabilitation Services	36
	Summary	58
III.	CONCLUSION	64
	Conclusion	64
	Recommendations	64
APPENDIX		
A.	FLOOR SPACE AVAILABLE FOR DEVELOPMENT	68

Page

APPENDIX

B. REHABILITATION RESOURCES AND NEEDS FOR STROKE PATIENTS, TEXAS HOSPITALS, 1967 . . 70

C. SUMMARY OF MEDICARE REHABILITATION BENEFITS . . 72

D. PROFILE OF STROKE PATIENT, ST. JOSEPH HOSPITAL 75

E. ACTIVE AND COURTESY STAFF PHYSICIANS, ST. JOSEPH HOSPITAL, 1968 77

F. COMMUNITY REHABILITATION RESOURCES 79

G. THE TEXAS STATE PLAN FOR CONSTRUCTION AND MODERNIZATION OF HOSPITALS AND RELATED MEDICAL FACILITIES, FORT WORTH, FY 1968 . . 83

H. CONSTRUCTION COSTS, HILL-BURTON PROGRAM . . . 86

I. SUMMARY OF RECOMMENDED SERVICES AND ESTIMATED COSTS 88

BIBLIOGRAPHY 90

LIST OF TABLES

Table		Page
1.	Population of Fort Worth and Tarrant County . . .	3
2.	Financial Status of the Patient Population During August, 1967	4
3.	Stroke Rehabilitation Facilities and Services Listed By Texas Hospitals as Present or Needed	24
4.	Stroke Rehabilitation Personnel Listed By Texas Hospitals as Present or Needed	24
5.	Stroke Patients Used in St. Joseph Study	26
6.	Stroke Admission By Doctor Specialty, St. Joseph Hospital	27
7.	Costs of Stroke Care, St. Joseph Hospital	28
8.	Specialties of Medical Director in Rehabilitation Centers	37
9.	Guides For Determining Staff Complements For Selected Ranges in Patient Workload	42
10.	Comparison of Hospitals With Social Work Departments, 1954-1964	49
11.	Floor Space Available For Development	69
12.	Rehabilitation Resources and Needs For Stroke Patients--Texas Hospitals, 1967	71
13.	Profile Data on Stroke Patients, St. Joseph Hospital, 1968	76
14.	Active and Courtesy Staff Physicians, St. Joseph Hospital, 1968	78
15.	Texas State Plan--Fort Worth Inpatient Rehabilitation Needs	84
16.	Texas State Plan--Fort Worth Outpatient Rehabilitation Needs	85

Table Page

17. Representative Construction Costs, Hill-Burton Hospitals and Health Facilities 87

18. Summary of Recommended Services and Estimated Costs 89

LIST OF ILLUSTRATIONS

Figure		Page
1.	Relationship Between Goals for Stroke Patients and Rehabilitation Services . . .	23
2.	Stroke Admissions to St. Joseph Hospital, July, 1967, through April, 1968	26
3.	Summary of Community Rehabilitation Resources	80

CHAPTER I

INTRODUCTION

General Information

National figures reported in 1961 revealed that there are nearly 74 million Americans suffering from one or more chronic conditions. Better than eight percent of the nations population, or 14 million people, have reported a reduced ability to work, to keep house, or to go to school.[1] Stroke, the third leading cause of death in the United States, is responsible for a significant number of these chronic disabling conditions. Estimates are that there are nearly two million survivors of a stroke in the United States today.[2] This amounts to at least one percent of the nations population.

While the death rate in 1962 amounted to 197,000 persons, the number of survivors of a stroke discharged from the nation's short-term hospitals in this same period amounted to 283,000 people.[3] The volume of this number makes it significant since the typical stroke patient has

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[1]U.S. Department of Health, Education, and Welfare, Public Health Service, National Health Survey, "Chronic Conditions Causing Limitation of Activities, United States, July, 1959-61," in Health Statistics (Washington, D.C.: Government Printing Office, October, 1962), p. 19.

[2]National Heart Institute, Cerebral Vascular Disease and Strokes (Washington, D.C.: Government Printing Office, 1964), p. 1.

[3]A National Program to Conquer Heart Disease, Cancer, and Stroke, Vol. II, Report of the President's Commission, Michael E. DeBakey, Chairman (Washington, D.C.: Government Printing Office, 1965), p. 458.

in the past, been regarded as having little rehabilitation potential and, too often, has been exiled to living a life confined in a nursing home or in the back bedroom. With the inception of modern rehabilitation techniques in the post-World War II era, much has been learned about restoring the disabled stroke patient to a more useful and productive life.

Today, an increasing number of the nation's hospitals are establishing rehabilitation programs for the care of many disabling conditions, including care of the stroke patient.

Today, also, the federal government is beginning to recognize the tragedy of stroke in our nation. In keeping with this recognition, the President of the United States established in February, 1964, the Commission on Heart Disease, Cancer, and Stroke. The mission of this appointed group was to determine what could be done to reduce the incidence of these three leading diseases.[4]

The commission published its report in December, 1964, which subsequently became the basis of Public Law 89-239 passed by Congress on October 6, 1965. Termed the Heart Disease, Cancer, and Stroke Amendments of 1965, this legislation authorized funds to be administered through regional medical programs to help combat these three particular diseases. Within this framework the State of Texas has been designated as one region comprising three separate geographic areas. The City of Fort Worth is located within one such area.

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[4] A National Program to Conquer Heart Disease, Cancer, and Stroke, Vol. I, Report of the President's Commission, Michael E. DeBakey, Chairman (Washington, D.C.: Government Printing Office, 1965), p. xi.

The Hospital Setting and History

Saint Joseph Hospital is located in the City of Fort Worth, Texas, the state's fourth largest city and the county seat for Tarrant County. Of the four largest cities in the state, Fort Worth is the leader in industrialization.[5] Population figures for 1965 indicate Fort Worth at 391,000 and Tarrant County at 600,000 people.

TABLE 1

POPULATION OF FORT WORTH AND TARRANT COUNTY

	1960	1970	1985
Fort Worth	356,268	487,000	840,000
Tarrant County	538,956	732,000	1,090,700[6]

The hospital itself is located near the downtown area. The immediate area surrounding the hospital is one of the poorer sections of town whose population is older and of Latin American or Negro extraction. Directly across the street is the city and county hospital, the John Peter Smith Hospital. Both of these hospitals have easy accessibility from all areas of the city via the freeway network. Interstate highway 35 leading to Dallas is located adjacent to these two hospitals.

Saint Joseph Hospital is a part of a medical complex comprising an approximate one mile radius in the heart of the city. Fort Worth's other two large voluntary general hospitals, the All Saints and Harris

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[5]Sister Mary Werner, "Community Survey" (unpublished Administrative report submitted to the Department of Hospital Administration, Saint Louis University, November 15, 1966), p. 39.

[6]Sister Helen Huewe, "Community Analysis" (unpublished administrative report submitted to the Department of Hospital Administration, Saint Louis University, November 15, 1967), p. 3.

Hospitals, are also a part of this complex. Located in the immediate vicinity are numerous doctors' offices, clinics, pharmaceutical suppliers, and medical supply outlets. A new outpatient rehabilitation center is being constructed one and one-half miles from the hospital adjacent to the Harris Hospital. In addition a number of nursing homes and extended care facilities are located within this general area. Saint Joseph Hospital, itself, has entered into a signed transfer agreement with twelve of these latter facilities.

The hospital has at present 425 operational beds throughout 12 floors with the capacity to expand to 480 beds.

The majority, or 75.3 percent, of the admissions, are residents of Fort Worth proper. Another 24.7 percent are residents of communities outside of the city limits of Fort Worth. Approximately 11 percent of the admissions reside within a mile radius of the hospital.[7]

The economic status of the patient population is evenly distributed as depicted in table 2.

TABLE 2

FINANCIAL STATUS OF PATIENT POPULATION DURING AUGUST, 1967

Wealth Rating	Percent of Total
High Wealth Zone	18
Medium High	26
Medium	17
Medium Low	20
Low	19[8]

[7]Werner, Survey, p. 6.

[8]Huewe, Survey, p. 15.

A study of the medicare patients during the first six months of 1967 showed that 31 percent of the total patient days were medicare days. The average length of stay for the medicare patient was 10.2 days.[9] Essentially all patients over 65 are covered by medicare.

The present cost per patient day is $60. The room rates for semi-private accommodations are $29 per day and $35 per day for private accommodations. Medicare will pay for semi-private accommodations only. In average cases the room costs account for 51 percent of the patient's bill, whereas, 49 percent is composed of fees for ancillary services.

Saint Joseph Hospital is educationally--and patient care--oriented; it has a total of 143 students presently undergoing training at the hospital. The hospital maintains schools of nursing, vocational nursing, medical technology, x-ray technology, and anesthesia. Although its educational programs for medical students are approved for internships, one year of general surgery, and three years of pathology, there are at present no interns or residents filling these positions. Two administrative residents are presently undergoing training.

Conditions Which Prompted the Study

The chief of the medical staff, in 1966, appointed an ad hoc committee to function primarily as an idea committee. The major purpose of this committee is to offer recommendations to the hospital policy makers as to the course Saint Joseph Hospital should take in fulfilling future community needs. Partially as a result of this committee's recommendations, the obstetrical service was closed in July, 1967. This

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[9] Ibid., p. 11.

has allowed a more concentrated effort to be devoted to the improvement of care of the medical and surgical patients of the area.

To coincide with this latter development, the hospital and staff have for a number of years demonstrated a special interest in the care of the stroke patient. This is partially evidenced by the hospital's unusually large neurological service. This large service is the result of it being the first hospital in the area to install the latest in angiographic diagnostic equipment. Consequently, physicians concerned with proper management of their stroke patients naturally have referred many of these patients to Saint Joseph Hospital for diagnostic studies. This practice continues and the hospital now has two special procedure operating rooms set up to handle the diagnostic procedures involved with the stroke patient.

Those physicians who have been attracted to Saint Joseph Hospital have established a team concept to provide total care for the stroke patient. These team physicians are active in attending numerous county medical society meetings throughout west central Texas to consult with local physicians on the treatment of the stroke patient and, in turn, are receiving a number of referrals from these areas.

This interest in neurological patients and the broadening interest in medical and surgical patients as a whole was compatible with that of the new regional medical programs. On December 12, 1967, a grant application was submitted by Saint Joseph Hospital to the Department of Health, Education, and Welfare, Public Health Service, National Institutes of Health through the Regional Medical Program of Texas. This application for an operational grant was for the purpose of establishing a stroke and

related neurological diseases demonstration and training unit. In keeping with the basic educational philosophy of the Regional Medical Program demonstration units, the Saint Joseph application envisions a regional program for 39 west central Texas counties to be administered through Saint Joseph Hospital. This hospital in turn would maintain a close liason with the Presbyterian Hospital in Dallas, Texas, which recently obtained just such an operational grant to encompass a number of east Texas counties. It also envisions that the educational resources of the Southwestern Medical School in Dallas, Texas, would be utilized.

Statement of the Problem

The problem is to determine what rehabilitation services will be required at Saint Joseph Hospital in Fort Worth, Texas, to provide support for a demonstration stroke care unit.

Objectives

In order to solve this problem, the following objectives were established:

1. To determine what rehabilitation services are normally required for the treatment of the stroke patient.

2. To determine which of these services are presently offered at Saint Joseph Hospital.

3. To determine which of these services are available in the local community.

4. To compare those resources available at the hospital with those in the community.

5. To analyze the stroke patient at Saint Joseph Hospital to

determine his particular needs and past disposition.

6. To evaluate each of eleven rehabilitation services.

7. To determine which of these services are required at Saint Joseph Hospital.

Definition of Terms

Allied health profession

Allied health professions include those health disciplines working along side of, or for, the physician to assist in the application of prescribed medical treatment procedures. This term applies to all of the rehabilitation services working under the direction of a physician.

Ancillary services

Ancillary services include all services that are required by a patient while hospitalized that are in addition to the hospital bed and basic nursing care. Examples of such services are laboratory, radiology, inhalation therapy, physical therapy, and pharmacy.

Aphasia

Aphasia is a disorder of language comprehension and use which is caused by insult to the brain.

Chronic condition

A condition is considered chronic if it has persisted for more than three months.

Comprehensive care

Comprehensive care is a concept of care that utilizes as many of the various rehabilitation disciplines as may be needed by a particular patient in order that the patient will attain his maximum rehabili-

tative potential.

Extended care facility

An extended care facility is a skilled nursing home or special part of the hospital offering less expensive post-hospital care.

Hemiplegic

A person who has a paralysis of one side of the body.

Paralysis

A paralysis is the loss or impairment of motor function in a part of the body.

Progressive care

Progressive care is the establishment of graduated levels, in terms of skills and equipment, of health resources so that these resources can provide each patient with the precise intensity of care required. These levels are intensive care, intermediate care, self care, long term care, and home care.

Regional medical program

A regional medical program is a cooperative arrangement among a group of public or private non-profit institutions or agencies engaged in research, training, diagnosis, and treatment relating to heart disease, cancer, or stroke.

Speech pathologist

Speech pathology is a term used to reflect the current role of the speech therapist. In this context it denotes a wider scope of functions to include diagnostic as well as treatment procedures.

Stroke

A stroke is a closure by a blood clot of an artery leading to

the brain, or a hemorrhage from an artery in the brain, causing temporary or permanent injury to nerve cells.

Team approach

The various health disciplines providing necessary services are integrated and coordinated under the leadership of a physician.

Criteria

To judge the soundness of the solution to this problem, the following set of standards are established:

1. The rehabilitation services must be provided by, or supervised by, fully qualified personnel.[10]

2. The proposed program must provide for comprehensive care.[11]

3. The proposed program must provide for progressive care.[12]

4. The proposed program must be coordinated and embrace the team approach.[13]

5. The program must be supervised by a physician.[14]

Limitations

The total square footage of the recommended services cannot exceed the 4,564 square feet available in the former obstetrical and

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[10] U.S., Department of Health, Education, and Welfare, Public Health Service, Guidelines For a Stroke Rehabilitation Program, PHS Publication No. 1166 (Washington, D.C.: Government Printing Office, 1964), p. 4.

[11] Ibid., p. 2.

[12] Ibid., p. 3.

[13] American Hospital Association, Statement on Optimum Health Services (Chicago: American Hospital Association, 1965), p. 1.

[14] Ibid.

delivery areas on the third floor. The breakdown of this available floor space is shown in Appendix A.

This study is limited to Saint Joseph Hospital and the community of Fort Worth, Texas, and does not encompass the proposed region of 39 west central Texas counties.

The estimated number of stroke patients that might come into the hospital once the demonstration program is underway has not been determined.

Cost limitations have not been imposed. It must be remembered, however, that cost estimates will not include the approximate $16,000 required for an air handler in the available third floor area.

Wherever possible, duplication of adequate rehabilitation services within the community is to be avoided.

While it is recognized that home care and homemaker services are an integral part of a comprehensive rehabilitation effort, no attempt is to be made in this report to evaluate these two specific services.

Factors Bearing on the Problem

The factors bearing on the problem are listed as follows:

1. Saint Joseph Hospital, an accredited hospital, has applied for an operational grant through the Regional Medical Program of Texas to establish a demonstration stroke care unit.

2. The hospital presently is providing up to date facilities, equipment, and techniques for the diagnosis and treatment of the acute stroke patient.

3. Saint Joseph Hospital presently offers only limited rehabilitation services for stroke patients.

4. There is adequate floor space available for expansion of rehabilitation services.

5. There are a number of agencies and facilities offering rehabilitation services in the community.

Assumptions

The following assumptions are made in an effort to minimize the variables affecting the solution to this problem:

1. That a coordinated stroke rehabilitation unit will enhance and improve the present care of the stroke patient at Saint Joseph Hospital.

2. That the establishment of such a unit will upgrade the level of knowledge of the allied health professional personnel working with such patients and will, therefore, enhance any educational programs that result from such a unit.

3. That the establishment of such a unit will significantly improve the rehabilitative care of the stroke patients in the proposed region.

4. That the hospital, being educationally oriented, would be receptive to establishing continuing education programs.

5. That the stroke patient workload will increase from its present input of fifteen patients per month.

6. That rehabilitation agencies external to the hospital will be willing to participate with the hospital in providing a coordinated rehabilitation effort.

7. That sufficient qualified manpower can be obtained.

Research Methodology

During the month of February, 1968, an initial visit was made to Saint Joseph Hospital in Fort Worth, Texas. At that time an interview was held with Mr. Charles D. Maguire, Assistant Administrator, in which the problem area was determined. A tour of the hospital revealed what rehabilitation services were presently being offered. Upon return to San Antonio a review of the literature was undertaken with emphasis on determining what services are needed for an optimum stroke rehabilitation program. This review was also conducted in an effort to understand the basic background and concepts of the recent Heart, Cancer, Stroke legislation.

An interview was conducted at the Robert B. Green Hospital, San Antonio, Texas, with Dr. Arthur P. Grant, Professor of Physical Medicine and Rehabilitation, University of Texas Medical School, San Antonio, Texas, and a member of the Task Force on Stroke, Regional Medical Program of Texas, for the purpose of gaining additional insights into this problem area.

A field trip was made to the San Antonio Rehabilitation Center to observe a rehabilitation stroke unit in operation. Another trip was made to Austin, Texas for an interview with Mr. Robert L. English, Executive Director of the Texas Hospital Association. At this time the Texas State Plan was perused to review the status of rehabilitation facilities in Fort Worth. The Texas Hospital Association's Salary Survey, which was conducted in 1966, was also examined at that time. Correspondence with the Texas State Department of Health, Health Facilities Construction Section in Austin, Texas, was conducted to obtain certain

representative construction and remodeling costs for rehabilitation facilities.

The Texas Hospital Association, in cooperation with the Regional Medical Program of Texas, Task Force on Stroke, conducted a survey of Texas hospitals in October, 1967. This survey was undertaken in an effort to determine what Texas hospitals have, or feel they need, in terms of resources to provide care for their stroke patients. Although these results have not yet been compiled, the raw data was made available to this author for use in this report.

A return visit was made to Saint Joseph Hospital in May, 1968, for a two-week period. During this time a study was made of the clinical and financial records of all stroke patients admitted to the hospital during the past three month period. This was an attempt to establish a profile of the stroke patient at Saint Joseph Hospital. These records were also used to determine the disposition and method of payment of these particular patients.

Tours were made of four nursing homes and extended care facilities that are affiliated by transfer agreements with the hospital. One outpatient rehabilitation center was also toured for the purpose of determining the quality of rehabilitative care provided the stroke patient once he leaves the hospital. These facilities were the Autumn Leaf Lodge, Medicenter, Webber Nursing Home, Jones Convalescent Home, and the Fort Worth Society for Crippled Children and Adults Center. Judgements as to the caliber of care were, in all cases, qualitative and based upon the qualifications of the personnel administering the service, the facilities available, the number of patients seen, and the length of time

spent with each patient.

A survey of the Directory of Community Resources in Fort Worth and Tarrant County, 1968, the 1967 Guide Issue of Hospitals, and the 1964 Directory of Rehabilitation Centers was made to identify those facilities and agencies within the community that provide appropriate rehabilitation services. Those deemed pertinent to this study were compiled for inclusion in this report. A telephone survey was conducted to include the Speech and Hearing and Counseling and Guidance Clinics at Texas Christian University to determine the availability of these two clinics in rendering services to the general public.

An interview with Miss Alta Sisk, Director of Social Service, John Peter Smith Hospital, Fort Worth, Texas, was held for the purpose of determining the feasibility of sharing this service between the two hospitals.

Demographic data was obtained through a review of two unpublished reports compiled by two previous administrative residents at Saint Joseph Hospital.

Literature Review

Rehabilitation has been described as the process of aiding an individual with a disability to reach his full physical, mental, social, and economic potential.[15] This concept of medicine, while not new, has only recently begun to gain the recognition that it is shown today. Rehabilitation has often been thought of as the last phase of medicine,

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[15]American Hospital Association, Physical Therapy Service: A Guide to Organization and Management (Chicago: American Hospital Association, 1965), p. 4.

and a technique to be applied once the disease or injury process has run its full course. Today, as the result of the success of rehabilitation efforts of the World War II injured, rehabilitation medicine may be thought of as a procedure to be initiated during the acute phases of the episode, to be intensified during convalescence, and to be continued once the patient leaves the hospital environment.

The objectives may be thought of as first, eliminating, if at all possible, the patient's disability; second, reducing, to the greatest extent possible, the disability suffered by a patient; and third, retraining a disabled person to work to his maximum capabilities.[16] To meet these objectives rehabilitation embraces the concepts of comprehensive and progressive care in a coordinated team effort to provide continuity from the time the patient is first admitted to the hospital until he is returned to some vocationally productive status.[17] This team is made up of members providing medical services, such as doctors, nurses, and therapists; social services; psychological services; vocational services; and education.[18]

Not all of these services are necessarily provided in the general hospital setting. The extent to which they are is dependent upon the size of the facility and the types of patients treated. In

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[16]"Report of the Subcommittee on Rehabilitation," Howard A. Rusk, chairman, in A National Program to Conquer Heart Disease, Cancer, and Stroke, Michael E. DeBakey, chairman (Washington, D.C.: Government Printing Office, 1965), p. 227.

[17]American Hospital Association, Optimum Health Services, p. 2.

[18]U.S. Department of Health, Education, and Welfare, Public Health Service, Areawide Planning of Facilities For Rehabilitation Services (Washington, D.C.: Government Printing Office, 1963), p. 3.

all cases services must be tailored to the needs of the local clientele. As a general rule rehabilitation facilities should be located in the more densely populated areas for easier accessability.[19] Where they are located in general hospital settings, they are usually operated as a separate administrative unit and are considered a service unit to the entire institution.[20] Depending upon the emphasis of the parent hospital, the rehabilitation departments may take on one of several different patterns.[21] The programs of a medically oriented rehabilitation facility emphasize the physical restoration of the patient and aim to bring the patient to the highest level of attainment possible within the limits of his physical disability. Rehabilitation facilities in general hospitals are usually medically oriented in program emphasis. Psychosocially oriented facilities, on the other hand, tend to concentrate their attention on the long term or permanently disabled psychological and psychiatric disorders. In a vocationally oriented facility, one finds the emphasis placed upon vocational services. Such facilities cater more often to patients who are well on their way to recovery or to those less severely involved in the first place. A comprehensive program will, naturally, provide what services are needed, regardless of orientation, at the time they are needed. This point was further emphasized in the Report of the Subcommittee on Rehabilitation of the President's Commission on Heart, Cancer, Stroke. This report emphatically states that "every stroke center or station must have services of a comprehen-

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[19]Public Health Service, Areawide Planning, p. x.

[20]Ibid., p. 21.

[21]Ibid., pp. 19-20.

sive rehabilitation program, not only physical but vocational."[22]

Two methods of establishing a rehabilitation service in a general hospital have been developed.[23] The first method, the goal approach, is no doubt preferable since it is based upon the individual conditions and disabilities treated. Thus, it makes available the necessary allied health professional personnel to treat individual conditions and provides for a more integrated type program. The second approach, the additive approach, while less preferable in terms of patient care, is probably the more practical for the majority of general hospitals. This method consists merely of adding one or two rehabilitation services as the need arises and the finances become available.

Since rehabilitation involves the services of many highly trained allied health specialists working as a team, the service is expensive. Consequently, utilization of these resources is critical. Educating the physicians as to the importance of early referral is only one aspect of this utilization. Experience has shown that in densely populated or highly industrialized areas facilities have a high rate of usage.[24] While only a few facilities actually approach maximum utilization, those with a full-time medical director, easy accessibility, good third party support, and medical orientation usually

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[22]Subcommittee on Rehabilitation, Heart, Cancer, Stroke, p. 227.

[23]American Hospital Association, Rehabilitation Services in Hospitals and Related Facilities (Chicago: American Hospital Association, 1966), p. 30.

[24]Public Health Service, Areawide Planning, p. 27.

experience the highest rate of utilization.[25] "Diffusion of responsibility usually results in little or no rehabilitation actually taking place."[26]

While many of these concepts in the past have been applied to individual stroke patients, many more patients have been needlessly relegated to living out their lives in an invalid state simply because they did not have access to rehabilitation services. No longer need the hemiplegic patient lead a hopeless life. Ninety percent of those surviving a stroke may be taught to walk again, and as many as 30 percent can be taught to do gainful work.[27] This all may take time to do, and present methods of predicting the actual achievement potential of these patients are inadequate.[28] In order to maximize the outcome, all members of the rehabilitation team stress the importance of early referral so that treatment may be initiated during the acute episode.[29] While most uncomplicated stroke patients stay in the general hospital two to three weeks,[30] it has been estimated that the optimum rehabili-

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[25]Ibid., p. 2.

[26]American Hospital Association, Rehabilitation Services, p. 23.

[27]National Heart Institute, Strokes, p. 10.

[28]Jerome W. Gersten, "Evaluation of Rehabilitation Potential in Stroke Patients," in Stroke Rehabilitation, ed. by William S. Fields and William A. Spencer (St. Louis: Warren H. Green, Inc., 1967), p. 77.

[29]Public Health Service, Stroke Rehabilitation Guidelines, p. 3.

[30]Arthur P. Grant, M.D., Professor of Physical Medicine and Rehabilitation, University of Texas Medical School, San Antonio, and member of the Task Force on Stroke, Regional Medical Program of Texas, private interview held April 16, 1968.

tation effort would require closer to 60 days.[31] Often times it is much longer.

It is apparent from this that some mechanism providing for post-hospital follow through is needed and should become an integral part of the rehabilitation effort. The Office of Vocational Rehabilitation has only recently been given the authority to accept anyone for treatment for a period of six months provided it is demonstrated they can benefit from such treatment. Treatment for a period of up to 18 months has been authorized for certain disabling conditions including stroke patients.[32] Since the total rehabilitation effort with stroke patients is often a lengthy procedure, this latter program should do much to relieve this critical need.

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[31]Texas Hospital Association, "Resources Available For Care and Treatment of Stroke Patients" (unpublished survey conducted on behalf of the Task Force on Stroke, Regional Medical Program of Texas, October 6, 1967). (Memorandum.)

[32]Mary E. Switzer, "The Role of the VRA in Stroke Rehabilitation," in Stroke Rehabilitation, ed. by William S. Fields and William A. Spencer (St. Louis: Warren H. Green, Inc., 1967), p. 156.

CHAPTER II

DISCUSSION

The Rehabilitation Needs of the Stroke Patient

The typical stroke patient in our society is aged, financially dependent, and partially disabled. He most often will have a weakness, or paralysis, of one side of his body which may render him incapable of sustaining even his normal daily activities. He may or may not have difficulty speaking and communicating. Incontinence is not uncommon. If he was gainfully employed, he often will require a period of vocational retraining in order to return to work. In short, he has been described as at the mercy of society.[1] In this situation he does not know what his needs are, where to seek help, and is totally incapable of coordinating his own rehabilitation program.

It is essential that stroke patients in need of rehabilitation services be referred at the earliest feasible time to facilities where allied health personnel are available.[2] The National Heart Institute suggests that this referral often can be within 24 hours of onset of the stroke.[3] The President's Commission Report on Heart Disease, Cancer, and Stroke describes the treatment personnel as a team consisting

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[1] Subcommittee on Rehabilitation, Heart, Cancer, Stroke, p. 229.

[2] Ibid., p. 227.

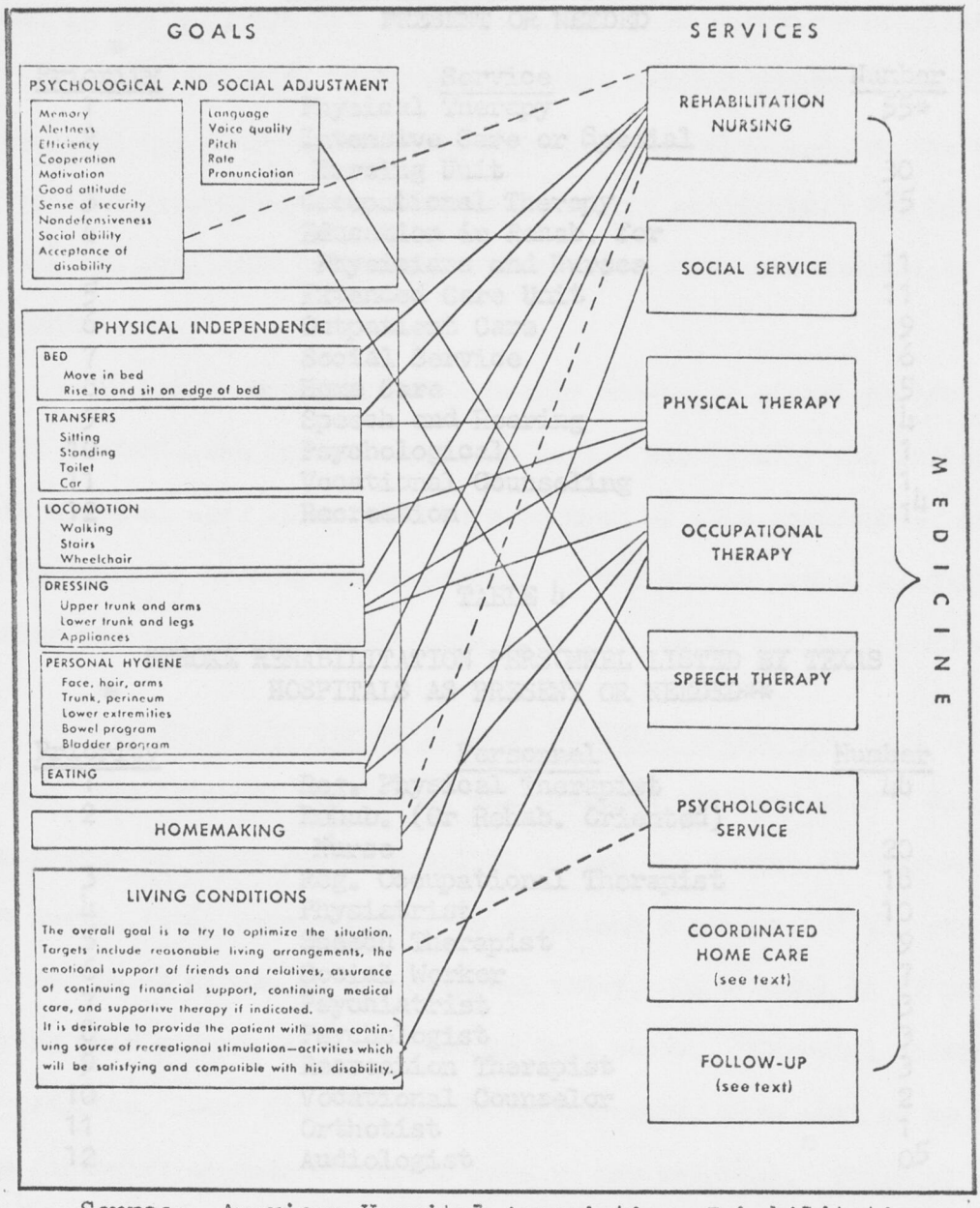
[3] National Heart Institute, Strokes, p. 12.

of physicians, physical therapists, occupational therapists, speech therapists, rehabilitation nurses, psychologists, rehabilitation counselors, orthotists, social workers, and recreation specialists.

These various disciplines can be integrated into a coordinated program based upon attaining certain established objectives. Figure 1 depicts this goal approach to establishing a stroke rehabilitation program.

An attempt was made to analyze the returns of the survey conducted by the Texas Hospital Association's Task Force on Stroke to determine what Texas hospital administrators felt were the important elements of a rehabilitation program for their stroke patients. Tables 3 and 4 summarize the services and personnel as to the frequency they were listed as either existing in the hospital or as being needed in the hospital. These figures are based on 57 responses to the survey which was conducted in November, 1967; and they include 20 returns from hospitals under 100 beds, 15 returns from hospitals of 100 to 200 bed capacity, and 22 responses from hospitals having a bed capacity of over 200 beds. Appendix B depicts the tabulation of the raw data accumulated as the result of the Texas Hospital Association's survey.

The needs, then, are for early referral to the appropriate services and a means for coordinating members of this rehabilitation team in order that progressive and comprehensive care can be applied at the right place and the right time. Provisions for home care and post hospital follow up are also indicated. Priorities for establishing services, if a program were to be developed by the additive method, could be based upon the data presented in the foregoing two tables.



Source: American Hospital Association, Rehabilitation Services in Hospitals and Related Facilities (Chicago: American Hospital Association, 1966), p. 29.

Fig. 1.--Relationship Between Goals for Stroke Patients and Rehabilitation Services

TABLE 3

STROKE REHABILITATION FACILITIES AND SERVICES LISTED BY TEXAS HOSPITALS AS PRESENT OR NEEDED

Priority	Service	Number
1	Physical Therapy	55*
2	Intensive Care or Special Nursing Unit	30
3	Occupational Therapy	15
4	Education in Rehab. for Physicians and Nurses	11
5	Extended Care Unit	11
6	Outpatient Care	9
7	Social Service	6
8	Home Care	5
9	Speech and Hearing	4
10	Psychological	1
11	Vocational Counseling	1
12	Recreation	1[4]

TABLE 4

STROKE REHABILITATION PERSONNEL LISTED BY TEXAS HOSPITALS AS PRESENT OR NEEDED**

Priority	Personnel	Number
1	Reg. Physical Therapist	48
2	Rehab. (Or Rehab. Oriented) Nurse	20
3	Reg. Occupational Therapist	18
4	Physiatrist	10
5	Speech Therapist	9
6	Social Worker	7
7	Psychiatrist	3
8	Psychologist	3
9	Recreation Therapist	3
10	Vocational Counselor	2
11	Orthotist	1
12	Audiologist	0[5]

Notes:

*55 of 57 administrators did not specify physical therapy service. If the administrator noted that a physical therapy department was present and also mentioned that additional clinic space was needed, this was counted as having both been present and as needed. The same applies to all services.

**Figures include part-time and consultant personnel.

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[4] Texas Hospital Association, "Resources for Stroke Patients."

[5] Ibid.

Impact of Medicare

The passage of Title 18 of Public Law 89-97 in 1965, commonly known as the Medicare Act, is significant with regard to rehabilitation of the stroke patient. This act provides medical insurance to those persons 65 and older and consequently provides coverage for the majority of patients suffering from cerebral vascular accidents. The benefits of the two available programs, Plan A and Plan B, are summarized in Appendix C.

At Saint Joseph Hospital nearly one-third of all patient days, or 31 percent, are medicare patient days. Essentially all patients at this hospital aged 65 or older are covered by this insurance. As depicted in Appendix D, seventy-seven percent of the stroke patients admitted during the past three months have been covered by medicare insurance.

Profile of the Stroke Patient at Saint Joseph Hospital

The clinical records of all patients admitted with a diagnosis of hemiplegia to Saint Joseph Hospital during the months of February, March, and April, 1968, were analyzed to establish a picture of the stroke patient as he exists in the hospital today. Of a total of 57 admissions during this period, 34 were used in this study. Financial records of 31 patients, identified by the above procedure, were studied to assess the financial aspects of stroke care in the hospital. Three of the 34 financial records used in this study were not available. The number of hemiplegic admissions each month was obtained for the past ten months of operation. Records for June, 1967, and earlier were not readily available since that month marked the conversion to computer classification of patients' records.

As a result of these studies, certain characteristics of the stroke patient in this hospital became apparent.

The mean average number of hemiplegic admissions to the hospital each month is 14.6. Of this number, 3.2 expire. Figure 2 depicts the number of admissions during the past ten months.

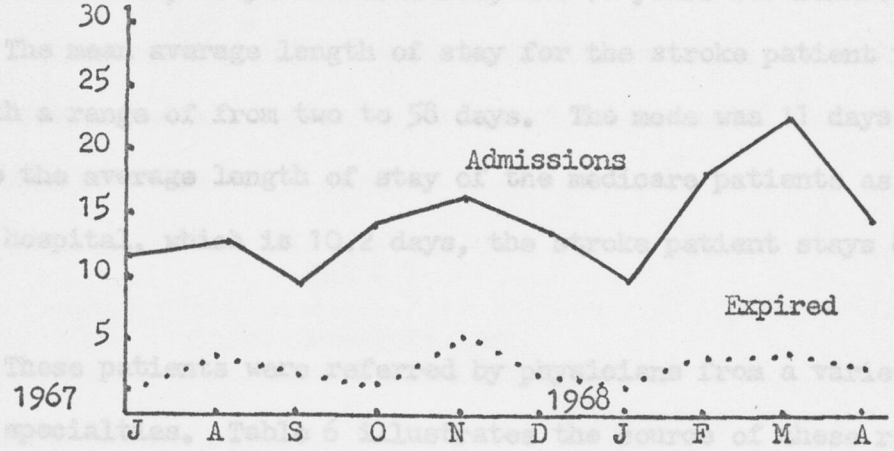


Fig. 2.--Stroke admissions to St. Joseph Hospital, July, 1967, through April, 1968.

A total of 57 patients with a diagnosis of hemiplegia were admitted during the 1968 months of February, March, and April. Table 5 shows the breakdown of the number of patients used in this study.

TABLE 5

STROKE PATIENTS USED IN ST. JOSEPH STUDY

Total hemiplegics admitted in three months.....	57
Total hemiplegics expired during this period.....	11
Sub-total	46
Total old CVA's--Admitted for another condition.....	8
Sub-total	38
Total CVA's admitted for arteriograms only	3
Sub-total	35
Total classified other than stroke	1
Total stroke patients used in study	34

Of the 34 patients used, 14 were male and 20 were female. The mean average age was 70.9 years with a range from 34 to 86 years. The median was somewhat higher at 74 years. This can be compared with a study conducted in Rochester, Minnesota, which indicated that the approximate median age for onset of cerebrovascular diseases was 66 years of age for both sexes, 62 years for males, and 71 years for females.[6]

The mean average length of stay for the stroke patient was 18.5 days with a range of from two to 58 days. The mode was 11 days. Compared to the average length of stay of the medicare patients as a whole in this hospital, which is 10.2 days, the stroke patient stays 8.3 days longer.

These patients were referred by physicians from a variety of medical specialties. Table 6 illustrates the source of these referrals.

TABLE 6

STROKE ADMISSION BY DOCTOR SPECIALTY,
ST. JOSEPH HOSPITAL

Specialty	Number
General Practice--Medicine	9
General Practice--Surgery	9
Internal Medicine	9
Neurosurgery	5
Cardiology	1
General Surgery	1
	34

A review of the clinical records showed that 32 of the 34 patients admitted with a diagnosis of stroke demonstrated some evidence

[6]Leonard T. Kurland, Nung Won Choi, and George P. Sayre, "Current Status of the Epidemiology of Cerebrovascular Diseases," in Stroke Rehabilitation, ed. by William S. Fields and William A. Spencer (St. Louis: Warren H. Green, Inc., 1967), p. 16.

of weakness, or paralysis, of the extremities. A total of 17 patients, a full 50 percent, presented some degree of speech involvement.

Thirty one financial records reviewed revealed that 11 of these 31 patients were referred to the physical therapy department during their course of treatment in the hospital. They made a total of 102 visits to this clinic for an average of 9.2 visits per patient. The total cost to these 11 patients for physical therapy service was $395 or $3.87 per visit. These costs are reflected as a part of the total cost for hospitalization in Table 7.

TABLE 7

COSTS OF STROKE CARE,
ST. JOSEPH HOSPITAL

Total cost to stroke patients	$23,617.00
Average cost per patient	$ 762.00
Average cost per patient day (stroke)	$ 42.86
Average cost per patient day (general)	$ 60.00
Total cost for physical therapy	$ 395.00
Average cost per patient visit to physical therapy	$ 3.87
Percent of CVA's covered by Medicare	77%

With the exception of one patient, all stroke patients under the age of 65 and not covered under medicare were covered by some other form of commercial insurance. Financial arrangements for this one patient were arranged through medicaid and welfare agencies.

Twenty of the 34 patients were discharged from the hospital to their homes. Three patients were discharged to nursing homes and 11 to extended care facilities.

Status of the Current Rehabilitation Program at Saint Joseph Hospital

Facilities for diagnosis and acute care

The hospital is well equipped and well staffed to perform diagnostic procedures and to provide definitive care during the acute stages of the illness. There is a special procedures room in the operating suite where angiograms and arteriograms are performed. The electrophysiology department records electroencephalograms and electrocardiograms. Brain scanning equipment is also available. A large inhalation therapy department performs approximately 1750 intermittant positive pressure breathing procedures each month. There is a radioisotope laboratory and a well equipped clinical laboratory staffed with three full time pathologists. The departments of radiology and anesthesiology also have full time physicians on their staffs. A 16-bed intensive care unit, which has the latest in automatic patient monitoring equipment as well as closed circuit television for patient observation, is located on the sixth floor. Adjacent to this unit is a 21-bed unit that serves as an extension of the intensive care unit.

The hospital has a medical staff composed of 403 physicians. Of this number 119 are active members of the staff while the remainder make up the membership of the courtesy staff. One physiatrist holds courtesy staff eligibility (Appendix E). A total of 550 persons are employed by nursing service: 130 of these are registered nurses. One qualified dietitian and six nutritionists are available for special dietary instructions. Two chaplains, valuable assets to rehabilitative efforts, are also available on a full-time basis.

Rehabilitation facilities and services

The hospital does not have an organized department of rehabilitation, and there is not a full-time medical director. The chief of the orthopedic department, however, does act as the medical advisor to the physical therapy department. No inpatient beds have been set aside for rehabilitation patients. There is, at present, no one on the nursing staff with any special training in rehabilitation nursing techniques, and the concepts of rehabilitation are not generally followed by the nursing staff.

The rehabilitation program at Saint Joseph Hospital appears, superficially, to be both medically and psychosocially oriented. However, upon examination the program appears to be primarily medically oriented and is carried out by the physical therapy department. This latter department, which is centrally located for its service area, is well equipped and housed in approximately 3000 square feet of space. It is staffed by two Registered Physical Therapists, one having 14 years experience in Fort Worth, and one physical therapy aide. This department treats a variety of disabling conditions and has an average daily caseload of 30 patients per day. According to the department head, this caseload has increased steadily since moving into new facilities in January, 1968. On several days during the period this author toured the clinic, the caseload approached 40 patients per day. This caseload consists of both inpatients and outpatients with an average length of stay of 30 minutes. Outpatients in 1967 in this department accounted for 20 percent, or one-fifth, of all patients treated. No ward treatment program exists at present.

While there is a large psychiatric service housed at the hospital, little concentrated effort is being made toward psychosocial rehabilitation. The psychiatric service does have an occupational therapy clinic, consisting of 375 square feet of space, which is staffed by a graduate occupational therapist and one aide. The therapist is eligible to become a registered occupational therapist as she has completed the necessary academic requirements. This national registration examination will be taken in June of this year. The clinic, however, at the present time does not function as an integral part of the rehabilitation treatment program of the psychiatric patients. It exists solely to provide diversional activities to the psychiatric patients. The only fee charged for this service is an across the board $1 charge, and all patients in the psychiatric unit are eligible to participate in the various occupational therapy activities.

The clinic itself is organized under Nursing Service. The present caseload is 22 patients per day and patients stay an average of three and one-half hours each day. Approximately 59 percent of the psychiatric patients in the hospital attend occupational therapy. The occupational therapist is not involved in treating any cases involving physical disabilities at the present time.

There is no social service nor social workers at the hospital. There is no speech pathologist, or vocational counselor. Nor is there any organized recreational activity for either the medical or psychiatric patients.

Speech pathologists and social workers are sometimes requested from outside agencies by individual physicians for specific cases.

Clinical psychologists are utilized by the psychiatric service and are available on a consultation basis. This same policy exists with regard to orthotists who are available to come to the hospital as the need arises.

The hospital does not maintain an outpatient clinic, and home care is not provided by the hospital. Transfer agreements with approximately 12 nursing homes and extended care facilities have been negotiated to facilitate post-hospital care.

The Rehabilitation Program In the Community

A large number of health resources, applicable to developing a system of delivering comprehensive rehabilitative care to the stroke patient, are available within the local community. These resources are summarized in Appendix F.

The Texas State Plan for Construction and Modernization of Hospital and Related Medical Facilities reports that there are no inpatient beds set aside as rehabilitation beds in the entire county. They project a minimum need of 30 such beds for this purpose.[7] This same plan indicates there is no need for additional outpatient rehabilitation facilities since existing facilities are programmed as adequate for present requirements (Appendix G).

Fort Worth has 34 nursing homes with a combined total of 2,234 beds. This bed number is in excess of the programmed need.[8] Four of these homes, the Autumn Leaf Lodge, Webber's, Jones Convalescent

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[7]Texas State Department of Health, Division of Hospital Services, The Texas State Plan for Construction and Modernization of Hospital and Related Medical Facilities, Fiscal Year 1968 (Austin, Texas, 1968), p. 527.

[8]Ibid.

Home, and the Medicenter were toured and interviews were conducted with the administrators. Rehabilitation efforts in these four facilities ranged from none at all to daily treatment. Two facilities had small physical therapy clinics; the remaining two had no facilities set aside for such purposes. Three of the homes had active recreation programs; one of these provided transportation for patients to special events in the community. Three of the homes provided physical therapy service with programs supervised by part-time Registered Physical Therapists working on a contract basis. One of these three facilities employed the services of a full-time physical therapy aide. Speech therapy is provided on a contractual basis in two of the homes and a third is working on a similar arrangement to be provided by the Fort Worth Society for Crippled Children and Adults, Incorporated.

Based upon the qualifications of the paramedical personnel administering treatment in these homes, the time they spend at the facility, and the length of time they are available to treat the patients, it is the opinion of this author that the quality of care of the physical therapy effort is diminished once the patient leaves the hospital. This does not imply, however, that satisfactory results are not being achieved in these facilities.

The Fort Worth Society for Crippled Children and Adults, Incorporated, an Easter Seal Society affiliate, maintains a comprehensive outpatient rehabilitation center presently located on the outskirts of Fort Worth. This center will be moving into a new and expanded facility as of July 1, 1968, which will be located approximately one and one-half miles from Saint Joseph Hospital. This facility provides a comprehensive

array of services to include home care.

The Easter Seal Center has long shown an interest in the stroke patient. In 1963 they received a grant under the Community Health Services and Facilities Act for a demonstration project to teach early rehabilitation techniques. This grant terminated in June, 1966. They continue to treat a large stroke population: approximately 38 percent of their total caseload being comprised of this type patient.

This facility is the only rehabilitation center in the State of Texas to be certified by Medicare as an approved Home Health Agency. As such, they provide care, in conjunction with the City of Fort Worth Public Health Nursing Department, in the patients' homes on a referral basis. This Easter Seal Center also maintains contractual agreements with 11 nursing homes in Fort Worth to provide their rehabilitation services. At this time they have 22 stroke patients on their home care and nursing home care roles.

Of special interest is the emphasis of this facility on vocational counseling and training with referrals coming from all over the State as well as from the local Vocational Rehabilitation Division of the Texas State Education Agency. This latter office has provided the necessary funds for office space in the Center's new facility and will provide a counselor at State expense. The vocational unit is well equipped and staffed to evaluate patients' vocational aptitudes and abilities in either a three week testing unit or a long term unit. The latter being most suitable for hemiplegic and aphasic patients.

The City Public Health Nursing Department, while working with the Easter Seal Center as a Home Health Agency, presently has underway

a study to evaluate the effects of public health nursing on the homebound stroke patient. This agency has some 20 nurses in the field to provide home visits.

The Speech and Hearing Clinic at Texas Christian University provides testing and therapy, as they are able, to the general public. They have both qualified speech pathologists and audiologists available, however, most of the testing or treatment is performed by graduate students in speech and audiology under the supervision of qualified personnel. This clinic has the only audiologist that was identified by this research effort. They provide service on call and are working with one stroke patient at Saint Joseph Hospital at the present time. Referral must be from a physician, and only a nominal fee is charged.

Psychological services are available through the Easter Seal Center or the Counseling and Testing Center at Texas Christian University. The latter center will provide certain limited testing procedures on an on call basis but prefers to have patients referred to their facility. Additionally, there are three or four psychologists in private practice in Fort Worth who are presently utilized by the hospital's psychiatric physicians on a consultant basis.

Two commercial firms providing orthotic and prosthetic services for the residents of the community were identified. One of these firms is located only a few blocks from the hospital.

A number of potential resources for vocational counseling or training were identified. The Fort Worth Society for Crippled Children and Adults, Goodwill Industries, Vocational Rehabilitation Division of the Texas State Education Agency, and the Community Sheltered Workshop,

Incorporated all offer such services.

The Rehabilitation Services

The following section will discuss the various services and will undertake the determination of which services should be provided by the hospital and which should be provided by outside sources.

Medical direction

"Physicians are the guiding force in the rehabilitation program of the patient."[9] The present system has no full or part-time medical director, although, the chief of orthopedics does act in an advisory capacity to the Physical Therapy Department. It was pointed out earlier that utilization of rehabilitation facilities is enhanced by the appointment of a full-time medical director. Such an individual is more effective in interpreting the program to the medical profession and to the community, both whose support is vital for a successful operation. The Guidelines For a Stroke Rehabilitation Program list a full or half-time medical director as one of the minimum essential personnel necessary for a successful program.[10]

This physician need not necessarily be a physiatrist. It should be, however, someone respected by the medical profession and interested in rehabilitation. Table 8 indicates the type of physician specialties that serve as medical directors of rehabilitation centers.

Another form of medical direction sometimes used is through a committee. This committee is composed of physicians who have an interest

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[9] Public Health Service, Areawide Planning, p. 29.

[10] Public Health Service, Stroke Rehabilitation Guidelines, p. 4.

in rehabilitation and may consist of specialists in neurology, internal medicine, orthopedics, or general practice. It is common to appoint a committee chairman to maintain a close liason between the various disciplines and the committee and to act as a spokesman for the program to the medical profession. The particular advantage of this type of direction is that it involves a number of physicians in the planning and operation of the program. Probably its major drawback is that, even though these physicians may have the interest, they still do not possess the intricate knowledge of rehabilitation medicine as that possessed by someone trained in that specialty.

TABLE 8

SPECIALTIES OF MEDICAL DIRECTOR IN REHABILITATION CENTERS

Specialty	Number Reported		
	Full Time	Part Time	Total
Physical Medicine	30	20	50
Orthopedist	3	15	18
Neurologist	-	2	2
Internal Medicine	2	8	10
Pediatrician	2	2	4
General	3	6	9
Other	-	4	4
Unidentified	2	3	5
All Specialties	42	60	102

[11]

The services of a full-time medical director with specialized training as a Physiatrist has been requested in the grant application.[12]

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[11]U.S. Department of Health, Education, and Welfare, Office of Vocational Rehabilitation, "Medical and Related Services in Rehabilitation Centers," February 27, 1961 (Mimeographed.), quoted by Public Health Service, Areawide Planning, p. 29.

[12]St. Joseph Hospital, Application For Regional Medical Program Grant, Fort Worth, Texas, November, 1967.

Since this individual is a specialist in rehabilitation and thus the most knowledgeable about the skills and resources of the other members of the rehabilitation team, this choice would seem to be the logical one.

The question as to the necessity of a full-time member, it would seem, remains with the potential caseload of patients from sources other than stroke. The present stroke caseload would not seem to be sufficient to justify a full-time physician. The Easter Seal Center, which has a much larger rehabilitation program than the one envisioned with the stroke unit, has only a half-time medical director.

The salary indicated for the full-time medical director, as specified in the grant application, is $35,000 annually. Salary figures, based upon a review of the literature conducted by this writer, indicate the salary is more likely to be in the neighborhood of $22,500 annually for a full-time physiatrist.[13] Half-time or part-time salary estimates are based on this figure. A distinct advantage of the one-half time director is that the coordination and interpretation aspects of the program can still be provided but at one-half the cost in terms of salary.

Office space and treatment room space requirements are approximately 300 square feet.[14] The cost estimate to remodel for this space,

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[13] "Regional Rehabilitation Program Through Coordinated Community Action" (paper outlining the proposed rehabilitation programs of the three Action Bases of the Regional Medical Program of Texas, n.d., p. 63. (Mimeographed.)

[14] E. R. Erikson and E. Pederson, "Design Criteria For a Rehabilitation Unit," Hospitals, XXXIX (March 1, 1965), 58.

based upon the Hill-Burton experience of approximately $20 per square foot, is $6,000. Representative construction costs for hospital modernization are depicted in Appendix H.

Rehabilitation nursing

In addition to the fundamental nursing techniques one normally associates with good general nursing care, the nurse, oriented or trained in rehabilitation nursing, practices certain specialized techniques on the nursing unit. Among the techniques practiced are the prevention of joint deformity through proper bed positioning, preventing decubitus ulcers, stressing self care activities, bowel and bladder training, and supporting the labors of the other rehabilitation disciplines. Since the nurse is with the patient the major part of the day, her importance to the rehabilitation effort is critical. One of the principles of planning rehabilitation services is that programs for preventing disability should be planned concurrently with programs to provide the rehabilitation.[15]

It has been suggested that each hospital having a stroke program appoint a nurse at the supervisory level as the focal point for rehabilitation nursing in the hospital. In this capacity she can assist in teaching restorative techniques to other nurses and aides, she can facilitate early referrals for rehabilitation, and she can coordinate post-hospital care with the public health nurse.[16]

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[15]Public Health Service, Areawide Planning, p. ix.

[16]Public Health Service, Stroke Rehabilitation Guidelines, p. 3.

As was discussed previously, Saint Joseph Hospital, other than providing normal good nursing care, has no formal rehabilitation nursing program. The director of nursing service recently attended an American Hospital Association sponsored conference on rehabilitation, and she presently has plans to send a nurse supervisor to a short course on rehabilitation nursing techniques. Upon return, this nurse would function in a staff position as rehabilitation nursing coordinator and have the responsibility of instituting and controlling these concepts throughout the nursing units.

Another possibility would be to obtain the services of a nurse with previous training in rehabilitation nursing. Based upon salary figures reported in the Texas Hospital Association's Salary Survey of 1967, this latter proposal would necessitate a salary expenditure of approximately $6,700 annually. Such a solution, it is felt, would tend to demoralize the nursing staff by not following a policy of promoting from within. One possible advantage, however, would be that the individual hired might bring considerable experience to the staff along with her academic qualifications. Training one of the supervisors at the hospital, on the other hand, would bolster morale; and since she is already employed, the only expense involved would be for travel and tuition.

Physical therapy

This service participates in stroke care throughout all phases of progressive care. It begins with exercises at the bedside and extends care into the home once the patient is discharged. Responsibility for retraining in ambulation activities, preventing joint de-

formities, and performing functional activities such as stair climbing and wheelchair transfers are normally bestowed upon the physical therapist.

The need for this service in the management of the hemiplegic patient has been well established as it had by far the highest priority rating in the survey conducted by the Texas Hospital Association (Appendix B). This service exists in Saint Joseph Hospital, is adequately equipped, and has sufficient floor space with room to expand. It is not a question of whether this service should be provided as this need has been well established. The problem to be resolved here is one of proper utilization.

The head of the department feels that the present caseload of 30 patients per day is about the maximum number the present staff can effectively treat in one day. An absolute formula for staffing does not exist since there are many variables involved. Table 9, however, can be used as a guide in determining the patient-therapist ratio.

If this is to be regarded as a guide, it should be recognized that more time will be needed if ward treatments are given or if there is no central hospital transportation system. The types of disabilities treated also have a bearing on the staffing pattern. Rehabilitation patients tend to stay in the department two to four times longer than the average general medical or surgical patient, and, consequently, one therapist can treat only about one-half as many rehabilitation patients in one day.[17] This staffing pattern

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[17]Public Health Service, Areawide Planning, p. 67.

is brought out since it was the distinct impression of this researcher, during my observation visits to this department, that this service is performing very little actual rehabilitation. As opposed to rehabilitative training procedures involving transfer activities, ambulation training, and other self care type exercises, most of the treatment procedures observed involved the application of various heat modalities. Such observation indicates that should a significant rehabilitation caseload materialize, adjustment in the present staffing pattern would be required.

TABLE 9

GUIDES FOR DETERMINING STAFF COMPLEMENTS FOR SELECTED RANGES IN PATIENT WORKLOAD

Average No. of Pts. Treated Daily	Staff Complement	
	Physical Therapists	Nonprofessional Assistants (Including clerical)
10-20	1	1
20-40	2	1
50-70	3	2
90-110	5	3-4
120-150	7	4-5

[18]

The review of the clinical records revealed several significant points with regard to present utilization of this service. In at least two of the cases reviewed, nursing personnel were being asked by the doctor to begin ambulation training procedures on the nursing unit instead of being referred to the physical therapist. A second factor noted was that there appears to be extended delays in initiating rehabilitative treatment. While some patients are referred as early

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[18]American Hospital Association, Physical Therapy Service, p. 11.

as one week post-onset, others may go two to three weeks before some sort of treatment is requested.

It is felt that both of these problems involve improper utilization of this service and could be partially resolved by instituting a ward treatment program. Such a program would involve the therapist taking the treatment to the patient's bedside. This would relieve the nursing service of the responsibility of carrying out physical therapy procedures on the ward, and it would make treatment available for those patients whom the attending physician does not feel are ready to be moved. Since the present caseload is at, or near, capacity, a program such as this would necessitate additional personnel. Salary costs would amount to approximately $6,250 for a beginning therapist based upon the Texas Hospital Association's 1967 Salary Survey.

Facilities for activities of daily living training are considered an integral part of the rehabilitation armamentarium. Such a unit, added onto the physical therapy facilities, would require approximately 550 square feet at an estimated cost of $11,000 for remodeling. The advantage of such a unit, to be utilized by both physical and occupational therapy services, would be that patients could be instructed in such self care activities as cooking and ironing by the occupational therapist or wheelchair transfer activities by the physical therapist, in a home-like environment, prior to their actual discharge from the hospital. Such practice leads to safe performance once the patient is on his own. However, the non-availability of such a unit does not preclude the teaching of these activities by substitute methods.

Another distinct advantage in terms of education of rehabilitation personnel is concerned is that the presence of such a unit would facilitate demonstration of the goals of the rehabilitation effort. This latter advantage must be heavily weighted. However, in view of the present orientation toward modality therapy as opposed to rehabilitation type therapy and the comparatively short length of hospital stay in terms of complete rehabilitation, it is felt that such a unit would receive little usage and would not justify its expense. As the program develops, consideration should be given to adding such a treatment unit to the present facilities. In the meantime substitute methods are suggested for use as the need arises.

Conservative estimates indicate that no less than 10 percent of the inpatients of an acute general hospital can benefit from physical therapy.[19] Based upon this percentage, the inpatient caseload should approximate 35 to 38 patients per day under present census figures. This figure does not include outpatients. Estimates, based upon the outpatient caseload of 20 percent of the total, would put the anticipated caseload at 42 to 45 patients per day. Since there is a large surgical, neurological, and orthopedic patient population at Saint Joseph, it is more likely that these figures are even ultraconservative. And since the hospital will expand to a bed capacity of 480 beds, it is highly probable that this department will be treating 50 or more patients per day in the foreseeable future.

A formula worked out at Rancho Los Amigos Hospital specifies approximately 50 square feet of space for each patient treated. This

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[19]American Hospital Association, Physical Therapy Service, p. 3.

formula does not include hydrotherapy facilities.[20] Should additional space be required, 760 square feet are available in a corridor adjacent to the clinic. Utilization of this space would provide the clinic with access to outside windows thus providing a view and fresh air.

It is felt that an additional physical therapist should be acquired so that an effective ward program can be initiated. Observation indicates that in view of the relatively short period of stay in the hospital, efforts should be concentrated on those procedures utilized during the acute and sub-acute stages of the illness. Obviously, then, provisions for post-hospital follow up are needed. No activities of daily living unit is felt to be necessary at this time. Should experience indicate a need for such a unit, as well as for additional space in the clinic itself, consideration should be given to utilization of the unused corridor space adjacent to the clinic.

Occupational therapy

As discussed earlier, this service, while available in the hospital, serves only to provide a diversionary function for the psychiatric patient. It is not presently utilized with physical disabilities. The existence of such a service would bring several important activities to the rehabilitation program heretofore not present. Practice in feeding, dressing, grooming, and other daily living activities normally fall within the jurisdiction of the occupational therapist. Certain pre-vocational testing activities can be performed by the occupational therapist which could aid in evaluating vocational

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[20]Erikson and Pederson, Design Criteria, p. 56.

potential. In addition diversional activities available through this service may replace the need for a formalized recreational therapy program in the hospital. The Texas Hospital Association's Stroke Survey indicated a need for this service in a comparatively large number of hospitals.

The potential for growth of the psychiatric occupational therapy service exists, and it is not deemed advisable to disregard this entirely. Occupational therapy aides, however, are capable of handling the current program on the psychiatric service. Therefore, one additional non-professional aide would free the therapist from other than supervisory duties and allow her time to become involved in the care of the medical and surgical patients of the hospital. While this would take the therapist away from the present clinic, it is not felt that this would detract from the program as it exists. This aide's salary is estimated at $2,850 annually based on nurse's aides salary figures.

Approximately 60 percent of the medical and surgical patients referred for occupational therapy can be treated on the nursing unit at the bedside.[21] Such a ward program could be established in Saint Joseph Hospital at no additional expense except that involved in releasing the therapist from a portion of her present duties. The present clinic has a ward cart for use on the nursing units. As the caseload warrants, space adjacent to the present physical therapy clinic can be made available. This should be anticipated for future

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[21]Wilma L. West and Alonzo W. Clark, "Planning the Complete Occupational Therapy Service," Hospitals, XXV (October, 1951), 89.

planning purposes. The American Occupational Therapy Association recommends 813 square feet for a basic clinic unit which can be added to as needed.[22] This includes office and storage space. The estimated cost for remodeling existing facilities to accommodate this service would be $16,000.

It is felt that this service should be made available to the stroke patients at this hospital beginning with a ward program and progressing to a combined ward and clinic program as the caseload warrants. The combined initial cost for this service would be $18,850.

Social service

Social diagnosis and treatment is a part of comprehensive care, and the individual casework is the responsibility of this service. A Medical Social Worker is best equipped to appraise those forces acting on the patient such as his resources, his background, his family, his environment, and the resources of his community which might be brought to work in his behalf.[23]

This service is not available at Saint Joseph Hospital at the present time; although, it previously had been as a part of the now defunct outpatient clinic. The John Peter Smith Hospital, directly across the street, has such a service staffed by two graduate social workers. On rare occasions they are called in to assist on individual

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[22] Ibid.

[23] A. F. Cacchillo, "Criteria For Establishing a Rehabilitation Service in a General Hospital," Hospital Management, XCIX (March, 1965), 45.

cases at Saint Joseph Hospital by physicians who know of their existence.

Sister Mary James, Administrator, St. Joseph Hospital has estimated that as many as 50 percent of the current medicare patients in the hospital are in need of this service. This amounts to in the neighborhood of 60 patients who could utilize this service if it were available today. The status of stroke patients is such that they particularly are in need of this service. This is especially true in the area of post hospital referral and follow up. The need for social workers in general in the Fort Worth area was instrumental in the establishment of the School of Social Work at the University of Texas at Arlington, a nearby community.[24] There is also a potential need for this service within the psychiatric service at this hospital; however, under present conditions it could not expect to be utilized to any great extent.[25]

A comparison of hospitals having social work departments between the years 1954 and 1964 was made in a study by Pennell and Cooney. The results of this study are indicated in Table 10.

The possibility of sharing this service with a hospital such as the John Peter Smith Hospital exists. Such an arrangement would be less expensive to implement. However, it is felt that the best interests of the patients at Saint Joseph Hospital would be served by providing its own social service. Control and coordination of such

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[24]Huewe, Survey, p. 6.

[25]Harold B. Eudaly, M. D., Chief, Department of Psychiatry, St. Joseph Hospital, Fort Worth, Texas, private interview held May 15, 1968.

a service would be enhanced by such an in-house capability. Based upon the estimates of the potential patient load from the large medicare population, the stroke patients' needs for post-hospital follow up and referral, and the evidence that indicates an increasing percentage of 400-bed, short-term, voluntary hospitals have social services, it is felt that it would be advantageous to establish this service as a separate administrative unit at Saint Joseph Hospital.

TABLE 10

COMPARISON OF HOSPITALS WITH SOCIAL WORK DEPARTMENTS, 1954-1964

Type of Hospital	Total No. of Hospitals		Hospitals with Social Work Staffs			
			Number		Percent	
	1954	1964	1954	1964	1954	1964
Short-term General						
A. Voluntary	4106	4290	404	575	10	13
Under 200 beds	3513	3410	134	167	4	5
200-399 beds	497	695	208	283	42	41
400 and over beds	96	185	62	125	65	68
B. State and Local Govt.						
400 and over beds	73	82	66	70	90	85
C. Federally Owned						
400 and over	90	87	78	84	87	97

[26]

"A reliable formula for the number of social workers required for various sized institutions does not exist."[27] Regarding qualifications, while it is recognized that formal qualifications are not necessarily the only effective measurement of effectiveness, 77 per-

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[26]Maryland Y. Pennell and James P. Cooney, "Social Service Departments in Hospitals--1954 and 1964," Hospitals, XLI (March 16, 1967), 92.

[27]American Hospital Association, Essentials of a Social Service Department in Hospitals and Related Institutions (Chicago: American Hospital Association, 1961), p. 11.

cent of the social work staffs of short-term general hospitals in 1964 were graduate social workers.[28] The estimated starting salary for a graduate social worker is $8,700. Office space of approximately 150 square feet will be needed. Sufficient unused office space is presently available adjacent to the emergency room. Access to clerical assistance is also needed.

Psychological service

The function of this service is to provide information pertaining to a particular patient's intelligence level, aptitudes, personality, emotional adjustment, and vocational interests. The psychologist develops a profile of the patient's present and potential abilities and makes referrals for psychotherapy when appropriate.

This service is presently utilized by the psychiatric service by referring patients to three or four clinical psychologists in private practice in Fort Worth. These psychologists come to the hospital, then, on a consultant basis.

While psychological services are utilized to a considerable extent in vocational evaluations at the Easter Seal Center, their experience has been that very few stroke patients are ever referred to psychologists for anything other than that associated with vocational work-up. The Texas Hospital Association Stroke Survey indicated that such a service was a low priority item for stroke care.

Estimates for salary expenditures for a Master's degree level psychologist are $8,500 annually. At the Ph.D Level this would be

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[28]Pennell and Cooney, Social Service, p. 97.

estimated at $15,000. Office space and a testing room would require approximately 240 square feet for an estimated remodeling cost of $4,800.

In view of the availability of this service in the community, its low utilization by stroke patients, and its comparatively high cost in terms of utilization rates, this service is not regarded as an essential department of the hospital. Liason should be established with either a practicing psychologist or agency providing psychological services to provide this service on an on-call basis for the stroke unit.

Vocational counseling and training

Considering the age category of the average stroke patient, it is easy to understand why little effort has been expended in the past to retrain a person following a stroke for vocational pursuits. In addition counselors have not been universally enthusiastic about attempting to evaluate and train a patient whose course of rehabilitation is often a slow and lengthy process.

This latter problem should be partially relieved by the recent policy change of the Office of Vocational Rehabilitation which makes training for a period of up to 18 months a possibility. This office has, however, an age limit of under 60 years on the patients it will accept for vocational appraisal, training, and placement.

In a recent study of industrial patients under 65 years of age who had suffered a stroke, it was found that 62 percent of them returned to work. Another study of 100 consecutive stroke patients admitted to a hospital was reported on by the same author. The

results in this latter study indicated that approximately 16 percent of those who survive a stroke return to employment within a two year period.[29] If these two percentages were applied to the 34 patients used in this study, one might estimate that four or five of the under 65 age group would return to gainful employment and that five of the total number of stroke patients evaluated over a three month period would return to some form of employment. Providing vocational services in the hospital would enhance the continuity of care these five patients would receive.

To establish a vocational testing and training service would require considerable space and expensive equipment. As an example the Easter Seal Center has allocated 3857 square feet of space and $18,000 worth of equipment to the vocational unit at the new facility.[30]

While it is felt this service should be available for those stroke patients whose status warrants it, the availability of this resource in the community is deemed more than adequate to handle the present or potential caseload generated by this stroke unit.

Speech therapy

Certainly one of a stroke patient's most crippling disabilities is the loss in the ability to comprehend or use language. This type of language disorder is termed aphasia, and its evaluation and treat-

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[29]John M. Panya, "Factors Accounting For Successful Vocational Placement of Persons With Stroke," in Stroke Rehabilitation, ed. by William S. Fields and William A. Spencer (St. Louis: Warren H. Green, Inc., 1967), p. 142.

[30]Robert Scott, Administrator, Fort Worth Society for Crippled Children and Adults, Inc., private interview and tour of the Easter Seal Rehabilitation Center, May 8, 1968.

ment require the services of a qualified Speech Pathologist. While this disorder does not occur in all patients suffering a stroke, its frequency and its degree of disability make it imperative that this service be available in a comprehensive treatment program. In the study of Saint Joseph stroke patients, 50 percent demonstrated some degree of speech affliction.

As this service is not presently available as a part of the hospital's services, speech pathologists from other agencies are sometimes called in to evaluate and treat by individual physicians. These people are able to bring the necessary equipment with them and are trained to administer screening type audiological tests with portable audiometers as well. This method of operation has certain advantages. It provides a service on a need basis only and, thus, it best utilizes the available speech personnel resources in the case of fluctuating workloads. It also eliminates the expense of establishing and maintaining a speech therapy service at the hospital. Another advantage is that it allows the therapist to provide supportive care early at relatively little expense and to establish a rapport with the patient for direct therapy at a later date. It has been emphasized that while supportive care should begin as soon after the stroke as possible, direct therapy should begin only after the stage of spontaneous recovery from the stroke is passed.[31] This period of time is usually three to four months post-onset and is long after the patient has been discharged from the hospital.

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[31] Joseph M. Wepman and Lyle V. Jones, "Aphasia: Diagnostic Description and Therapy," in Stroke Rehabilitation, ed. by William S. Fields and William A. Spencer (St. Louis: Warren H. Green, Inc., 1967), p. 91.

This service is available through several community agencies and clinics. The Director of the Speech and Hearing Clinic, Texas Christian University, who is qualified both as a speech pathologist and an audiologist, presently is following one patient at Saint Joseph Hospital.

Space requirements to implement this service are estimated at 1066 square feet.[32] The estimated cost to remodel is $21,320. Salary costs for a beginning Master's degree level Speech Pathologist would be $7,200. The total cost, exclusive of equipment, would amount to approximately $28,520.

With the present therapy input of stroke patients into this service generously estimated at five patients per month, it would appear that this could best be handled on a service as needed basis. Even if all new stroke patients were screened for speech and hearing deficits, only about 11 patients per month would be evaluated at the present rate of input.

Since supportive care is the keynote in the early care of the asphasic patient, well oriented nursing and other rehabilitative personnel could be of assistance to the speech pathologist in management of the stroke patient while hospitalized. Such orientation could be accomplished thru in-service education programs conducted by consulting speech personnel.

It is felt that arrangements for speech services should be made on a contractual basis. Such a contract should include specifications to include speech pathology support in any stroke clinic or education

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[32]Public Health Service, Areawide Planning, p. 72.

program relating to stroke management that is generated as the result of the demonstration unit.

Recreational therapy

Therapeutic recreation, administered by a graduate Recreation Therapist trained specifically to administer to the ill and handicapped, is often effective in coping with the tendency of the stroke patient to withdraw from social contacts. This withdrawl symptom can be a major roadblock to successful rehabilitation. Through social gatherings and group activities, the stroke patient is helped to overcome this unwillingness to mix with the public.

No such formal recreation program exists in the hospital for medical or surgical patients; although, the patients on the psychiatric service have only recently formed a recreation committee and set aside one night a week as an evening devoted to group recreational pursuits. The occupational therapy clinic also provides certain diversional activities in a social setting for the psychiatric patients. Of the five post-hospital care facilities surveyed, four had some type of recreational or activity program for their long term patients. Although two had personnel appointed to plan and conduct such activities as a part of their regular duties, none of the individuals had any specific training in either recreation or recreation for the handicapped. In one facility, however, this service was performed by a person trained in social work. Two of the four recreation programs were conducted by volunteers.

At the San Antonio Rehabilitation Center, San Antonio, Texas, it is felt that the objectives of the social experience are met by the

method in which the various therapies conduct their treatment programs. Physical therapy, occupational therapy, and speech therapy treatment programs for stroke patients are all conducted on a group basis. Game type activities are sometimes interjected as a means of optimizing the social situation.[33]

No salary figures nor space estimates for recreational services could be determined.

While the need for social integration of the stroke patient exists, the question as to whether a facility offering short-term care should provide professional recreational care is one that has to be decided upon. With the average length of stay at 18 days, the feeling of this author is that little worthwhile could be accomplished by a full-time recreational director in such a relatively short period of time. It is felt, however, that the recognition of this need by all of the team members and inclusion of certain group work within their own treatment programs will optimize the situation as far as the short-term general hospital is concerned. It is also felt that the occupational therapist would be the natural person to assume primary responsibility for supervision of this service. The use of volunteers to conduct special recreational programs to be held in the evening so as not to interfere with normal daytime operations, is another potential source for this service. If such programs are conducted, a person knowledgeable of the emotional lability of the stroke patient should be in attendence.

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[33]Gene Taylor, Administrator, San Antonio Rehabilitation Center, San Antonio, Texas, private interview and tour of the Center, April 5, 1968.

It does not appear logical that Saint Joseph Hospital should employ a full-time director to conduct recreational activities. Consideration should be given to utilizing existing resources to provide a social environment for the stroke patient.

Orthotist

Orthotic services are not needed with all stroke patients. There are occasions, however, when the question as to whether a patient will ambulate safely and independently is dependent upon the presence of the services of a bracemaker. No such service presently is provided by the hospital; although, the services of at least two commercial brace shop firms are utilized by the hospital's orthopedic service on an as needed basis. This same arrangement has been made by both the San Antonio Rehabilitation Center and the Fort Worth Easter Seal Center. At the San Antonio Center, the orthotist participates in the weekly clinic for evaluation of patients.

The minimum space required for a brace shop would be 253 square feet for an estimated remodeling cost of $3,060.

While it stands to reason that orthotic service to the patient would be faster and minor brace adjustments made with greater ease to all concerned, it is difficult to visualize how the present stroke caseload could justify the inclusion of such a service in this hospital. Because of this and of the present availability within the community, it is felt that this service for the stroke unit should be provided by a commercial firm on a contract basis. Such a contract should specify the participation of an orthotist in any type of stroke clinic that might result from such a unit.

Summary

The stroke patient in our society is most often an elderly citizen who suddenly finds himself incapable of caring for his normal daily activities. He may have lost his ability to communicate with others, and he often is incontinent of bladder and bowel. If he was employed he will very likely need retraining before he is able to return to employment.

To cope with this problem, a rehabilitation team consisting of physicians, nurses, physical therapists, occupational therapists, speech therapists, psychologists, social workers, rehabilitation counselors, orthotists, and therapeutic recreation specialists is employed in a coordinated effort to effect optimum realization of the patient's potential.

If the team is to be most effective, it must have the opportunity to begin the various treatment programs early in the course of patient care. While certain of these services are considered basic to stroke management, others should be instituted only upon evidence indicating a particular need for them. Regardless of what services are provided, or who provides them, there is a need to provide a means of coordinating the program in order to maximize the efforts of all the participants.

Recent federal legislation in the form of Medicare has now made the services of this rehabilitation team available to many who could previously ill-afford its cost. Seventy-seven percent of the stroke patients admitted to Saint Joseph Hospital during a three month period beginning February, 1968, were covered by this type of insurance.

Saint Joseph Hospital averages 14.7 stroke admissions each month, of which 3.2 expire. They average 70.9 years of age and spend

18.5 days in the hospital. The majority demonstrate some weakness of the extremities, while one-half demonstrate some degree of speech involvement. Approximately one-third are referred for physical therapy while in the hospital. Upon discharge from the hospital, 59 percent return directly to their homes, and 41 percent are referred to nursing homes or extended care facilities.

The hospital presently has a medically oriented physical therapy service. The occupational therapy service, while available, is not presently utilized in the management of medical or surgical patients. There is no full-time medical direction of the rehabilitation program, however, a medical advisor to the physical therapy program has been appointed and is functioning in that capacity. No inpatient beds have been designated for rehabilitation purposes at Saint Joseph or any of the city's hospitals. The basic concepts of rehabilitation nursing are not presently universally practiced within the hospital.

Within the community are a number of facilities and agencies that provide services applicable to stroke patients. An inventory of these services is necessary to avoid needless duplication of adequate health resources. Several have been identified that could assist Saint Joseph Hospital in providing comprehensive care to the stroke patient.

The question as to which of the various services should be provided by the hospital to support a stroke care unit and which should be provided by extra-hospital sources was decided based upon a combination of factors. The documented need for such a service within the hospital, its accessibility within the community, and the relative cost to implement the service were all such factors considered before determinations

were made.

The method by which medical direction is applied, for example, takes on several forms. It has been determined that utilization of rehabilitation facilities is best if the facility has a full-time medical director. While this fact is realized the question of the workload potential to support a full-time medical director is one that must be considered. Since the potential input has not been determined, an advantage of providing half-time direction is that the benefit of having someone to coordinate the efforts of the team and to interpret rehabilitation to the medical profession can be obtained at one-half the personnel cost. Once workload is determined, full-time direction can be added if required. Committee direction is advantageous from the standpoint of involving many physicians in the planning of rehabilitation services, but it is disadvantageous from the standpoint that most physicians do not have sufficient knowledge of rehabilitation medicine to provide meaningful direction.

The issue of the method of obtaining a nurse trained in rehabilitation nursing techniques was discussed from two viewpoints. The first method would be to send a supervisory nurse, presently employed at the hospital, to a short course for a period of training. This method would result in little expense when compared to the second method which would be to hire a pre-trained nurse at the supervisory level. Sending a member of the present staff for additional training would have a positive effect on the morale of the nursing staff as opposed to the bringing in of an outsider. This outsider, on the other hand, might bring to the hospital considerable experience in addition to her pre-

vious training. This experience factor would be a distinct advantage.

With the physical therapy service, the issue is not one of whether the service should be provided, but, rather, it is one of proper utilization of the services that are available. Initiation of a ward treatment program would make available care to those patients who are unable to be transported to the clinic for treatment and would relieve the nursing personnel from performing such activities. To establish this program would require that additional professional personnel be hired.

Additional space for an activities of daily living treatment unit was also considered as part of the physical therapy program. Such a unit would allow for certain normal daily activities to be taught prior to the patients discharge from the hospital. This feature adds to the safe practice of certain activities once the patient is discharged from the hospital and would significantly aid educational efforts at some future date. This unit could also be utilized by the occupational therapy service for similar activities. On the other hand, many of the techniques can be taught without the need for a specific unit to do so. Another negative factor is that, due to the present length of stay, the average stroke patient probably will not have attained a sufficient skill level prior to discharge to receive much benefit from such a unit. The outpatient, however, may profit by its availability.

The occupational therapy service, at present, serves only a diversionary function. Making this service available to stroke patients would add the ability to instruct patients in a number of basic household and personal care activities as well as provide a pre-vocational

testing program. This service could be initiated on a part-time basis by employing one non-professional aide to assume certain of the present therapists' duties. Such a proposal would necessitate that the occupational therapist relinquish some of her present duties with the psychiatric patients. It is not felt, however, that this would detract from the present program. The services of an occupational therapist can also be utilized to interject certain recreational activities into the rehabilitation program of the stroke patient.

There is a potential caseload of some 60 patients in Saint Joseph Hospital in need of the services of a social worker. Additionally, the early discharge of stroke patients from the hospital necessitates that provisions for follow up care for these patients be provided. An in-house social service could best provide the coordination and follow up necessary for successful rehabilitation even though this would necessitate an expense to establish such a service. The possibility of sharing this service is regarded as another method of obtaining this service. While such a proposal would cost less to implement, coordination between patient, social worker, and physician would be more difficult.

Psychological services are presently available on a consultation basis. Utilization of this service by stroke patients, however, has been described as minimal.

Vocational services are also available in adequate numbers in the community. While providing this service in the hospital would add to the continuity of the care of the patient, the ready accessibility and the minimal potential patient input make inclusion of this service questionable.

The need for speech therapy services was evidenced by the 50 percent of stroke patients with speech involvement at Saint Joseph Hospital. Although not provided as a service of the hospital, certain agencies within the community have been called in on an on-call basis to provide this care. This latter method has the advantage of conserving the scarce resources of speech therapists. Such a service, if provided by the hospital, would be limited to supportive care only during the patient's stay in the hospital and, thus, would not fully utilize the talents of the therapist administering the treatment.

Providing for a full-time recreation director to administer a recreational program would optimize the social aspects of the rehabilitation effort. The availability of patients to participate in such a program in a short-term hospital setting, however, must be considered. Similar advantages could be obtained by the inclusion of group work in the treatment programs of the available therapies. The latter proposal would negate the need for the services of a therapeutic recreation specialist.

Services for the fabrication of braces are available in adequate supply in the community of Fort Worth. While the service provided to the patient would be enhanced by in-house brace making capabilities, the expense involved, when compared to the potential caseload, raises the question of justifying its inclusion in the in-house rehabilitation program.

CHAPTER III

CONCLUSION

Conclusion

The rehabilitation services required at Saint Joseph Hospital in Fort Worth, Texas to provide support for a demonstration stroke care unit are medical direction, rehabilitation nursing, physical therapy, occupational therapy, and social service. Appendix I summarizes the space and cost requirements for these services.

The concepts of recreational therapy should be included as a part of the rehabilitation program at Saint Joseph Hospital.

The rehabilitation services consisting of psychological service, vocational service, speech therapy, and orthotic service should be provided by sources from within the community.

Recommendations

The following recommendations, based upon the facts presented herein, are made:

1. That a medical director, with specialization in Physical Medicine and Rehabilitation, be appointed on a half-time basis to head the rehabilitation team involved in providing support for the stroke care unit. As the program expands the appointment may be made for a full-time position.

2. That a Department of Physical Medicine and Rehabilitation be added to the present organizational structure. This department

would be headed by a Medical Director and include the Departments of Physical and Occupational Therapy.

3. That a nurse supervisor, presently employed by the hospital, be given the benefit of special training in rehabilitation nursing techniques, and, then, the responsibility to implement rehabilitation nursing concepts throughout the nursing units.

4. That the Physical Therapy Department inaugurate a ward treatment program by securing the services of an additional Registered Physical Therapist.

5. That the construction of an activities of daily living unit be deferred until such time as a recognized need for such a unit exists. Patients in need of such a unit in the meantime should be provided such care through substitute methods.

6. That the present occupational therapist devote one-half of her time to establishing and conducting a ward treatment program for medical and surgical patients. Particular emphasis should be devoted to developing a stroke rehabilitation program.

7. That a full-time occupational therapy aide be employed by the hospital to release the occupational therapist from certain of her present duties.

8. That the Occupational Therapy Clinic be reorganized under the proposed Department of Physical Medicine and Rehabilitation.

9. That a Social Service Department be established as a separate administrative unit. In connection with this proposal, it is recommended that the services of a graduate Medical Social Worker be obtained on a full-time basis to establish and operate this de-

partment.

10. That provisions for psychological services be established on a consultation basis through sources available in the community.

11. That vocational counseling, testing, and training be conducted by sources outside the hospital such as the Fort Worth Society for Crippled Children and Adults, Incorporated and the Texas Education Agency, Vocational Rehabilitation Division. Means for pre-discharge referral should be established.

12. That speech and audiological services be provided by such facilities as the Speech and Hearing Clinic at Texas Christian University or the Fort Worth Society for Crippled Children and Adults, Incorporated on a contractual basis. If this coverage proves unsatisfactory, installation of speech therapy facilities and personnel should be considered.

13. That the concepts of recreational therapy be incorporated within the treatment programs of physical and occupational therapy as able. The primary responsibility for carrying out therapeutic recreational activities should rest with the occupational therapist.

14. That the services of an orthotist be obtained from one of several commercial firms in the Fort Worth area on an on-call basis.

15. That a stroke unit planning committee be formed. Composition should include members of the community, the medical profession, and the rehabilitation services.

16. That long range plans for rehabilitation services be developed, and that space adjacent to the present physical therapy facilities be programmed for the anticipated future expansion of the

occupational therapy, speech therapy, and physical therapy programs.

17. That the study of the Saint Joseph Hospital stroke patients be expanded to include a larger population. It is also recommended that a similar study be performed to sample the proposed region of 39 west central Texas counties.

18. That a study be undertaken to determine the feasibility of establishing a stroke clinic at Saint Joseph Hospital.

19. That a study be made of home care services in Fort Worth.

20. That a study be made to determine the feasibility of adding some of the community's needed inpatient rehabilitation beds at Saint Joseph Hospital.

APPENDIX A

FLOOR SPACE AVAILABLE FOR DEVELOPMENT

TABLE 11

FLOOR SPACE AVAILABLE
FOR DEVELOPMENT

Room Description	Square Feet
Tub and Shower	28
Tub and Shower	20
Tub and Shower	25
Tub and Shower	25
Tub and Shower	20
Delivery Room	225
Delivery Room	297
Delivery Room	217
Delivery Room	210
Office	192
Labor Room	205
Labor Room	205
Labor Room	272
Labor Ward	960
Storage Room	196
Passageway	60
Formula Room	160
Bottle Room	104
Open Work Area	1,143
Subtotal	4,564
Corridor (Adjacent to P.T.)	746
Total	5,310

APPENDIX B

REHABILITATION RESOURCES AND NEEDS

FOR STROKE PATIENTS, TEXAS HOSPITALS, 1967

TABLE 12

REHABILITATION RESOURCES AND NEEDS
FOR STROKE PATIENTS-TEXAS HOSPITALS, 1967

Facilities or Services	Bed Size of Hospital						Total		
	0-100		100-200		Over 200				
	Have	Need	Have	Need	Have	Need	Have	Need	Total
Outpatient Care			2		7		9	-	9
Intensive Care Unit	2	2	5	2	10		17	4	21
Nursing Bed Unit			2	1	4	2	6	3	9
Nursing Home or Extended Care Fac.	1		2	1	6	1	9	2	11
Education Program and Rehab. Info.		2		5	2	5	2	9	11
Physical Therapy	11	5	12	6	18	3	41	14	55
Occupational Therapy	1	2		3	8	1	9	6	15
Psychological Services					1		1		1
Social Service		1		1	3	1	3	3	6
Vocational Service						1		1	1
Recreational Service				1				1	1
Speech and Hearing	1			1	2		3	1	4
Home Care		1			3	1	3	2	5
Equipment and Self help Devices									
Personnel*									
Physiatrist or Medical Director			3		7		10		10
Rehab. Nurse or Rehab. Oriented	3	2	4	2	4	5	11	9	20
Physical Therapist		10	13	4	15	6	28	20	48
Occupational Therapist		1	2	1	10	4	12	6	18
Social Worker			1	1	3	2	4	3	7
Speech Therapist			1	1	3	4	4	5	9
Psychiatrist					1	2	1	2	3
Psychologist					1	2	1	2	3
Audiologist									0
Orthotist					1		1		1
Recreation Therapist					2	1	2	1	3
Vocational Counselor			1			1	1	1	2

* Includes part time and consultant personnel.

Source: Texas Hospital Association, "Resources Available For Care and Treatment of Stroke Patients" (unpublished survey conducted on behalf of the Task Force on Stroke, Regional Medicine Program of Texas, October 6, 1967). (Memorandum.)

APPENDIX C

SUMMARY OF MEDICARE

REHABILITATION BENEFITS

SUMMARY OF MEDICARE REHABILITATION BENEFITS
UNDER PLAN A--HOSPITAL INSURANCE

Inpatient Hospital Benefits (Up to 90 days)
- Room and board in a semiprivate room
- Nursing services
- Supplies, appliances, and equipment such as crutches, canes, and wheelchairs
- Therapeutic services
- Medical social services

Extended Care Benefits (Up to 100 days)
- Room and board in a semiprivate room
- Physical, occupational, or speech therapy
- Nursing care
- Medical social services
- Supplies, appliances, and equipment ordinarily furnished to patients

Home Health Benefits (Up to 100 visits)
- Part-time nursing care
- Physical, occupational, or speech therapy
- Services of home health aides
- Medical social services
- Use of medical appliances
- Any of the above rehabilitative services outside the home which require equipment that cannot be brought to your home.

Source: U.S. Department of Health, Education, and Welfare, Social Security Administration, Health Insurance Under Social Security--Your Medicare Handbook (Washington, D.C.: Government Printing Office, June, 1966).

SUMMARY OF MEDICARE REHABILITATION BENEFITS
UNDER PLAN B--MEDICAL INSURANCE

Doctor Bills
- Medical and surgical services by a physician
- Services in connection with a physician's treatment such as medical supplies or services of his nurse
- Major dental surgery

Other Services
- Surgical dressings, splints, casts, and similar devices
- Rental of medical equipment for use in the home
- Braces
- Certain ambulance services

Home Health Services* (Up to 100 visits each year)
- Part-time nursing care
- Physical, occupational, or speech therapy
- Services of home health aides
- Medical social services
- Medical supplies
- Use of medical appliances
- Any of the above rehabilitation services outside the home which require equipment that cannot be brought to the home

Outpatient Services
- Physical therapy (After July 1, 1968)

*Benefits are in addition to those received under Plan A. The patient need not be hospitalized to qualify for home benefits under this Plan.

Source: U.S. Department of Health, Education, and Welfare, Social Security Administration, Health Insurance Under Social Security--Your Medicare Handbook (Washington, D.C.: Government Printing Office, June, 1966).

APPENDIX D

PROFILE OF STROKE PATIENT, ST. JOSEPH HOSPITAL

TABLE 13

PROFILE DATA ON STROKE PATIENTS,
ST. JOSEPH HOSPITAL, 1968

General				Disposition		Involvement		P.T.		Insurance		
Pt.	Sex	Age	Length of Stay	Home	Nursing Home or Ext. Care Fac.	Motor	Speech	Visits	Cost	Med.	Com.	Cost
1	F	74	23		x	x		7	$21	x	x	$1,425
2	F	68	25	x		x	x			x		881
3	M	62	24	x		x					x	1,264
4	M	52	10	x		x					x	387
5	M	66	19		x	x	x	4	12	x	x	802
6	F	67	8	x		x		N/A				N/A
7	M	85	11	x		x	x			x	x	379
8	M	75	11	x		x	x			x	x	428
9	F	60	26	x		x	x	N/A				N/A
10	F	60	26	x		x	x	9	27		x	901
11	F	85	16		x	x				x	x	710
12	M	61	46		x	x	x	N/A				N/A
13	F	67	11		x	x	x	5	15	x		601
14	F	76	19		x	x		9	73	x		922
15	F	75	2	x		x				x		184
16	F	76	15		x	x		9	67	x		638
17	F	75	34		x	x				x		1,065
18	F	66	38	x		x	x			x	x	897
19	F	62	30	x		x					x	1,526
20	F	85	9		x	x		5	15	x		384
21	F	84	9	x		x				x		382
22	F	59	4	x			x				x	435
23	F	79	7		x	x	x			x		264
24	M	67	14	x		x	x			x		900
25	F	68	6		x	x	x			x		261
26	M	84	17	x		x				x		652
27	F	34	14	x		x		4	12		x	1,113
28	M	79	42	x		x				x		1,244
29	F	86	5	x		x				x		184
30	M	82	8	x						x		423
31	M	80	2	x		x	x			x		156
32	M	74	31		x	x	x	16	51	x	x	1,538
33	M	78	11		x	x	x	4	12	x	x	397
34	M	61	58		x	x	x	30	90			2,274
Total				20	14	32	17	102	$395	24	13	$23,617

Note: N/A--Financial record not available

APPENDIX E

ACTIVE AND COURTESY STAFF

PHYSICIANS, ST. JOSEPH HOSPITAL, 1968

TABLE 14

ACTIVE AND COURTESY STAFF
PHYSICIANS, ST. JOSEPH HOSPITAL, 1968

Specialty	Active	Courtesy	Total
General Practice-Surgery	24	39	63
Internal Medicine	11	39	50
General Surgery	11	37	48
General Practice-Medicine	14	28	42
OB-Gyn	3	26	29
Orthopedics	4	17	21
Radiology	3	17	20
Psychiatry	13	5	18
Pediatrics	1	16	17
Anesthesiology	3	11	14
Ophthalmology	9	4	13
Ear, Nose, Throat	1	10	11
Urology	3	7	10
Pathology	3	5	8
Plastic Surgery	2	4	6
Dental	4	2	6
Proctology	2	3	5
Thoracic Surgery	2	3	5
Dermatology	1	3	4
Neurosurgery	2	1	3
Cardiovascular Surgery	-	2	2
Allergist	1	1	2
Cardiology	1	-	1
Physiatrist	-	1	1
Neurologist	-	1	1
Hand Surgeon	1	-	1
Pediatric Surgeon	-	1	1
Unspecified	-	2	2
Total	119	285	404

APPENDIX F

COMMUNITY REHABILITATION RESOURCES

	Nursing Care	Physical Therapy	Occupational Therapy	Social Worker	Psychological Service	Psychiatry	Vocational Service	Speech	Audiology	Recreation Therapy	Orthotist	Dietitian	Homemaker	Home Care	Chaplain	Outpatient	Financial Assistance	Transportation	Nursing Home Care	Inpatient Care	Number of Beds
All Saints Episcopal Hospital	x	x				x														x	357
Elmwood Sanatorium	x			x											x					x	12
Fort Worth Children's Hospital	x	x	x													x				x	72
Fort Worth Neuropsychiatric Hosp.	x		x			x										x				x	26
Harris Hospital	x			x		x										x				x	505
John Peter Smith Hospital	x	x		x		x									x	x				x	208
St. Joseph Hospital	x	x	x			x						x			x	x				x	425
USAF Hospital	x	x	x													x				x	225
USPHS Hospital	x	x	x			x										x				x	775
Fort Worth Society For Crippled Children and Adults	x	x	x	x	x		x	x	x					x		x		x			0
Autumn Leaf Lodge Extended Care Facility	3 x	x		2 x				4 x		x		x				x		x	x		110
Medicenter	x	x								x		x4						x	x		132
Webber Nursing Home	x	x4						x4		x									x		150

Notes:

No non-Federal hospital allocates any inpatient beds for rehabilitation.

1. Service provided by speech therapist.
2. Service provided by graduate social worker but not master's degree graduate.
3. Nursing service provided for home care patients only on a contractual basis.
4. Service provided on a contractual basis.

Fig. 3.--Summary of Community Rehabilitation Resources

	Nursing Care	Physical Therapy	Occupational Therapy	Social Worker	Psychological Service	Psychiatry	Vocational Service	Speech	Audiology	Recreational Therapy	Orthotist	Dietitian	Homemaker	Home Care	Education	Outpatient	Financial Assistance	Transportation	Nursing Home Care	Inpatient Care	Number of Beds
Jones Convalescent Home	x5																		x		58
Altrusa Club							x										x				
Arlington United Charities																	x				
Baptist Family Services																			x		
Community Sheltered Workshop, Inc.							x														
Counseling and Testing Center-T.C.U.					x		x														
Family Service Association													x								
City Public Health Nursing	x													x							
City Public Health Education															x						
Fort Worth Independent School District-Vocational Education							x														
Goodwill Industries							x														
Jewish Social Service Agency																	x				
Masonic Home For the Aged																	x				
Neighborhood Action, Inc.							x														

Notes:

5. Care provided by licensed vocational nurses.

Fig. 3.--Summary of Community Rehabilitation Resources

	Nursing Care	Physical Therapy	Occupational Therapy	Social Worker	Psychological Service	Psychiatry	Vocational Service	Speech	Audiology	Recreation Therapy	Orthotist	Dietitian	Homemaker	Home Care	Financial Assistance	Transportation	Education	Rehab. Equipment	Nursing Home Care	Inpatient Care
Sr. Citizen's Center of Tarrant County, Inc.										x										
Speech and Hearing Clinic-T.C.U.								x	x											
County Public Health Dept.	x													x			x			
County Welfare Dept.															x	x			x	x
County Association of the Handicapped																		x		
County Heart Association																	x			
State Dept. of Welfare-Public Assistance Div.															x				x	x
State Education Agency Vocational Rehab. Div.							x				x									x
State Employment Commission							x													
United Cerebral Palsy of Tarrant County, Inc.					x		x	x									x			
U.S. Social Security Administration															x					
Catholic Charities															x					
American Red Cross	x													x			x			
Fort Worth Brace Company											x							x		
Baker Brace Company											x									
West Texas Surgical Supply Company																		x		

Source: Directory of Community Resources in Fort Worth and Tarrant County, 1968 (Fort Worth: Tarrant County Community Council, January, 1968).

Fig. 3.--Summary of Community Rehabilitation Resources

APPENDIX G

THE TEXAS STATE PLAN FOR CONSTRUCTION AND MODERNIZATION OF HOSPITALS AND RELATED MEDICAL FACILITIES, FORT WORTH, FY 1968

REHABILITATION NEEDS

1. AREA	2. TOTAL CIVILIAN POPULATION		3. CIVILIAN POPULATION AGE 65 AND OVER:		4. STATE
S-1 Fort Worth	CURRENT	PROJECTED	CURRENT	PROJECTED	Texas
	577,000	636,000	36,425	40,199	5. FISCAL YEAR 1968

LOCATION		NO. OF FACILITIES				NO. OF BEDS EXISTING					NO. OF BEDS PROGRAMED			% NEED MET		TOTAL EXCESS BEDS IN AREA (Col. 12-Col. 17)
							NONCONFORMING									
CATEGORY COMMUNITY	NAME OF COUNTY	TOTAL EXISTING	TOTAL NEEDED	TO BE ADDED	TO BE MODERNIZED	TOTAL EXISTING	FEDERAL STANDARDS A-B-C	FEDERAL STANDARDS D	STATE STANDARDS	CONFORMING	TOTAL NEEDED	TO BE ADDED	TO BE MODERNIZED	CONSTRUCTION	MODERNIZATION	
6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
General Hospitals		19	13	0	8	2485	618	15		1852	2662	177	633	69.5	74.5	0
Fort Worth	Tarrant	17	12	0	7	2457	590	15		1852	2634	177	605			
Azle	Tarrant	1	1	0	1	10	10	0		0	28	0	28*			
Kennedale	Tarrant	1	0	0	0	18	18	0		0	0	0	0			
Long Term Care		34	30	0	0	2234	244	0		1990	1756	0	0	100	100	478
Chronic		0	0	0	0	0	0	0		0	0	0	0			
Nursing Homes		34	30	0	0	2234	244	0		1990	1756	0	0			
Fort Worth	Tarrant	29	25	0	0	1817	244	0		1573	1412	0	0			
Azle	Tarrant	1	1	0	0	20	0	0		20	20	0	0			
Kennedale	Tarrant	1	1	0	0	36	0	0		36	36	0	0			
Richland Hills	Tarrant	1	1	0	0	60	0	0		60	40	0	0			
N. Richland Hills	Tarrant	1	1	0	0	253	0	0		253	200	0	0			
Benbrook	Tarrant	1	1	0	0	48	0	0		48	48	0	0			
Mental Facilities		5				118				-	See Texas State Plan for CMHC					
Fort Worth	Tarrant	5				118				-						
Tuberculosis		1	1	0	0	68				68	42	0	0	100	100	26
Fort Worth	Tarrant	1	1	0	0	68				68	42	0	0			
Rehabilitation-Inpatient		0	1	1	0	0				0	30	30	0	0	100	0
Fort Worth	Tarrant	0	1	1	0	0				0	30	30	0			

* Maldistribution of beds--relocate within area

Source: Texas Department of Health, Texas State Plan, pp. 528.

1. AREA	2. TOTAL CIVILIAN POPULATION		3. CIVILIAN POPULATION AGE 65 AND OVER:		4. STATE
	CURRENT	PROJECTED	CURRENT	PROJECTED	Texas
S-1 Fort Worth	577,000	636,000	36,425	40,199	5. FISCAL YEAR 1968

LOCATION		NO. OF FACILITIES				NO. OF BEDS EXISTING					NO. OF BEDS PROGRAMED			% NEED MET		TOTAL EXCESS BEDS IN AREA (Col. 12-Col. 17)
CATEGORY COMMUNITY	NAME OF COUNTY	TOTAL EXISTING	TOTAL NEEDED	TO BE ADDED	TO BE MODERNIZED	TOTAL EXISTING	# NONCONFORMING FEDERAL STANDARDS A-B-C	# NONCONFORMING FEDERAL STANDARDS D	# NONCONFORMING STATE STANDARDS	CONFORMING	TOTAL NEEDED	TO BE ADDED	TO BE MODERNIZED	CONSTRUCTION	MODERNIZATION	
6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Rehabilitation-Outpatient		2	2	0	0									100	100	
Fort Worth	Tarrant	2	2	0	0											
Diagnostic or Treatment		9	9	0	3									66.7	66.7	
Fort Worth	Tarrant	9	9	0	3											

Source: Texas Department of Health, Texas State Plan, pp. 528.

APPENDIX H

CONSTRUCTION COSTS, HILL-BURTON PROGRAM

TABLE 17

REPRESENTATIVE CONSTRUCTION COSTS
HILL-BURTON HOSPITALS AND HEALTH FACILITIES

Years	Type of Project	No. of Proj.	Bldg. & Fixed Equip. Sq. Ft.	Bldg. & Fixed Equip. Bed	Project Cost Sq. Ft.	Project Cost Bed	Cost per Square Foot General	Cost per Square Foot Mech.	Cost per Square Foot Elec.
	HOSPITALS - NEW								
1967	Up to 75 beds	4	25.82	22,264.00	30.71	26,522.00	14.08	9.20	3.17
1967	75 to 150 beds	5	28.00	23,613.00	33.30	27,885.00	16.46	6.68	3.13
64-66	150 plus beds	3	26.40	27,532.00	31.30	32,330.00	17.30	5.65	2.08
	HOSPITAL - ADDITIONS								
1967	Beds plus Services	5	27.06	13,377.00	32.68	15,562.00	15.87	6.55	3.50
64-65	Ancillary Facilities	6	25.14	---	33.88	---	15.23	7.43	2.98
	HOSPITAL MODERNIZATION								
1966	General	1	19.95	7,550.00	21.10	8,700.00	9.70	4.90	2.35
1967	NURSING HOMES	6	24.67	12,137.00	28.94	14,078.00	14.30	5.90	2.66
66-67	REHABILITATION C. P. CENTERS SCHOOLS, ETC.	5	21.49	---	24.84	---	13.60	4.53	2.14
64-67	PUBLIC HEALTH CENTERS	3	17.65	---	22.97	---	11.79	4.11	1.16

Source: Texas State Department of Health, Health Facilities Construction Section, "Representative Construction Costs: Hill-Burton Hospitals and Health Facilities" (Austin, Texas: January 5, 1968). (Mimeographed.)

APPENDIX I

SUMMARY OF RECOMMENDED SERVICES

AND ESTIMATED COSTS

TABLE 18

SUMMARY OF RECOMMENDED
SERVICES AND ESTIMATED COSTS*

Service	Square Feet	Cost
Medical Direction		
Personnel		$11,250
Facilities	300	6,000
Rehabilitation Nursing	none	tuition & travel
Physical Therapy	none	6,250
Occupational Therapy	none	2,850
Social Service		
Personnel		8,700
Facilities	150	none
Total	450	$35,050

*Does not include the cost for secretarial services.

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A STUDY TO DETERMINE WHAT REHABILITATION SERVICES ARE NEEDED TO SUPPORT A DEMONSTRATION STROKE CARE UNIT AT SAINT JOSEPH HOSPITAL

MAJ Robert L. Doctor

95 Pages August 1969

ABSTRACT

The problem in this study was to determine what rehabilitation services should be provided at Saint Joseph Hospital in Fort Worth, Texas, to provide support for a demonstration stroke care unit.

Through selected interviews and literature review, those rehabilitation services most often utilized in the care of the stroke patient were identified. An inventory was then made of the rehabilitation resources available both in the hospital and in the community. Finally, a study of the hospital's stroke patients determined which of these services are most likely to be needed by this particular patient population.

It was determined that the services of medical direction, physical therapy, rehabilitation nursing, occupational therapy, speech therapy, social work, psychology, recreation, vocational counseling, and orthotics were those most often provided in a comprehensive rehabilitation program for the stroke patient. Physical therapy was the only rehabilitation service provided at the hospital. Sources providing a number of the other services were found to exist in the local community.

In an effort to avoid unnecessary duplication of these scarce resources, it was concluded that the services of medical direction, physical therapy, occupational therapy, rehabilitation nursing, and social work should be provided at the hospital. The others, it was felt, could be adequately provided by sources outside of the hospital. Recommendations to that effect were made.