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[TIRR] Strategic Plan [1984-1989]

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Withdrawal/Redaction Sheet (George Bush Library)

Doc. No. / Type	Subject/Title	Date	Restriction	Classification
01. Memorandum	To: Charles Beall From: Lew Frieden Re: [Confidential] (3 pp.)	1/30/89	C	
02. Paper	TIRR Strategic Planning Documents (11 pp.)	8/24/84	C	

Page 1 of 1

Collection:

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WHORM Cat.:

File Location: [TIRR] Strategic Plan [1984-1989]

Pinksheet Number: MB10854

OA/ID Number: 52066-001

Date Closed: 9/13/2016

FOIA/Sys Case #: 2016-2624-S

Re-review Case #:

P-2/P-5 Review Case #:

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Re-review Case #:		Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P-3 Release would violate a Federal statute [(a)(3) of the PRA]
P-4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P-5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
P-6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

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Strategic Planning
Notebook

MEMORANDUM

TO: W.A. Spencer, M.D.
FROM: Marcus J. Fuhrer, Ph.D. *MF*
DATE: February 19, 1985
RE: Your memo of February 12 regarding expectations for re-organizing TIRR's corporate structure

I think reorganization will be terrific if the objective is better financing of our research and educational activities. The prospect of an endowment fund raised by a foundation is an exciting one, as is the possibility of developing profit-making activities that spin-off from our R&D efforts.

I am fearful, on the other hand, that reorganization will have damaging effects on the administration of our educational and research programs. I am particularly concerned that distinctions between "hospital activities" and research activities will be heightened, thus reinforcing the mentality that research is to be done by "researchers" who are not a part of service programs and departments and who pretty much do their own thing.

I was impressed to learn that the foundation supporting research and education at the Rehabilitation Institute of Chicago has raised \$5 1/2 million in the last 6 months toward a \$15 million target for their endowment fund. An endowment of only half that size would assure TIRR's preeminence in research and education for decades to come.

2/8
lex
for your request -- for
you to keep. I've made copies
of what I want to retain
MF
P.S. Going thru the material
unsearched the attached memo of 2/19/85.
Note the last PP. The sentiment expressed
in the last sentence remains true.

Dr. F. H. R.



25 Years of Excellence

TO: The Development Committee
FROM: William A. Spencer, M.D.
DATE: February 12, 1985

A handwritten signature of William A. Spencer is written over the printed name in the "FROM:" line.

On February 11th, I met with Robert Landauer and Richard Sabolik of Peat Marwick to discuss preliminary plans for the TIRR reorganization study. They have requested that we submit a list of expectations for this reorganization to accomplish. I would ask that you submit to me in writing by February 20th, a list of issues and solutions involving TIRR's corporate reorganization as you perceive it.

As an example, an issue might be:

- simple vs. complex structure
- should the foundation be not-for-profit only?
- should TIRR have a holding company for the assets rather than the foundation?

I would like to plan a meeting with Mr. Richard Sabolik and the Development Committee on March 8th from 10:00 am - 12:00 to discuss our plan. Prior to that I would like to meet with you to develop a consensus.

Thank you for your time and effort. I look forward to your input and suggestions.

*Post TIRR
draft from
Baker that
implants was
strategic plan*

*TIRR in a
new phase
renewal
of physical plant
to first then 2nd - as MC.*

*Continuing process - (not just dry
research)
changing emphasis with room
prevalent features
how many professors here
are likely to change
here
what are likely to do
constants - vs variable*

THE INSTITUTE FOR REHABILITATION AND RESEARCH

MISSION

TIRR has chosen as its fundamental purpose, the return of the physically disabled patient to an autonomous, active, and productive, community-based lifestyle outside of an institution.

TIRR will remain one of the world leaders in medical rehabilitation, research, and education.

TIRR will provide highly specialized referral programs as well as general rehabilitation programs for the region, and will be a knowledge resource for community hospitals and rehabilitation services for the region.

GOALS

1. Continued excellence in service programs that serve as models for rehabilitation.
 - a. To ensure that each disability-specific program is effective and efficient and produces lasting results.
 1. Focus on rehabilitation outcome, with monitoring of results of our efforts and feedback to staff.
 2. Consumer input into program design (patients and families, referrers, employers, payors)...
 3. Commitment to clinical and administrative program modifications to improve both results and efficiency.
 4. Inclusion of relevant and practical research findings in program design that improve results.
 5. Cost containment while assuring quality services.
 - b. Availability and coordination of a comprehensive array of rehabilitation services, provided over all phases of rehabilitation, including:
 1. Stabilization and preservation of function.
 2. Functional restoration
 3. Transitional and independent living support.
 4. Follow-up after discharge for maintenance of results and improvement of outcome.
 - c. Continued development and retention of an excellent staff who make the programs happen, through:
 1. A complementary mixture of clinical and full-time faculty on the active medical staff.
 2. Team functioning and multi-disciplinary participation to improve synergy.
 3. Continuing education and personal growth.
 4. Continued selection and development of capable, creative and committed staff.
 5. Recognition.

2. Continuing development and coordination of networks of service providers and community resources for the disabled person.

- a. To provide essential backup and specialized support for community hospitals by offering regionalized tertiary care services.
- b. Intake linkages (e.g., trauma centers, hospitals, physicians, preferred provider organizations, insurance companies, self insured employers).
- c. Discharge linkages (e.g., home, SNF's, ICF's, HHA's, independent living centers).
- d. Training of related staff in referral and disposition sources to reduce complications and preserve function.

3. Development of increased opportunities in the community for return to work and de-institutionalization.

- a. Reduction of system-wide disincentives for return to work (especially in the legal, health and welfare, and care delivery systems).
- b. Improvement of employer and public awareness of the productive value of persons with disabilities and advocacy for their inclusion in the mainstream of community life.
- c. Education of employers regarding the real economic return on their investment in rehabilitation and re-employment of disabled workers.
- d. Early involvement of patient's employer and maintenance of employment opportunities.
- e. To foster development of additional employment opportunities.
- f. Development of less intensive and lower cost care possibilities for those patients for whom work and independent living is not an option.
- g. Innovation for additional opportunities for de-institutionalization, including resources for otherwise healthy ventilator-dependent persons.
- h. Development of disability-reducing or compensating innovations (e.g., barrier-free design, environmental controls, mobility and function-restoring technology, both engineering and clinical) that make possible de-institutionalization and return to work.
- i. Increased training in self-management to prevent complications requiring rehospitalization.

4. Continued leadership in development of human resources for the rehabilitation field by providing a primary site for clinical education.

- a. Continued functioning as a teaching hospital for undergraduate medical students and residents in physician specialties in rehabilitation medicine and rehabilitation surgery (Neurosurgery, Orthopedic Surgery, Plastic Surgery, PM&R, Radiology, Urologic Surgery).
- b. Continued functioning as a teaching hospital for training non-physician clinical professional staff (clinical nurses and public health nurses, physical, occupational and respiratory therapists, medical social workers, psychologists, orthotists, prosthetists, dieticians, and pharmacists).

- c. Continued functioning as a model environment for educational opportunities for administrative residents and graduate students.
5. To further the achievement of the above goals and objectives through continued leadership in clinical and operational rehabilitation research, targeted to problems in the clinical service programs and through modification of the clinical programs in the light of relevant and practical research findings.
 - a. Advance the knowledge base of contemporary rehabilitation medicine by providing a primary setting for clinical research and initial application of new diagnostic and treatment methods.
 - b. Continued support of high quality research programs in close affiliation with Baylor College of Medicine.
 - c. Continued research relationships with universities in the U. S. and other countries.
 - d. Continued excellence in existing Federal and privately sponsored research activities of mutual benefit.
 - e. Development of additional sources of research funding for key internally-generated questions.
6. To further the achievement of the above goals and objectives through education of various publics in pertinent aspects of rehabilitation via:
 - a. Publications (print and audio-visual).
 - b. Seminars.
 - c. Media.
 - d. Consultation.
 - e. Participation in policy-making bodies in the profession and the community.
7. To maintain and improve our financial resources necessary to provide rehabilitation services to the community as a whole, as well as to meet the rehabilitation needs of its medically indigent.
 - a. To ensure adequate financing beyond current operating needs that is also sufficient to meet standard business requirements of maintenance, expansion, and replacement of the physical plant, as well as education and research programs, consonant with community need.
 - b. To ensure that revenues are adequate to cover direct and indirect expenses, working capital needs, capital costs and a surplus for expansion of services and meeting permanent net working capital needs in future periods.
 - c. To evaluate our financial requirements against the usual hospital financial performance indicators, particularly those that measure our creditworthiness as determined by national credit rating agencies, and to maintain and improve them through financially sound and effective delivery of services.

- d. To incorporate appropriate procedures, such as discounted cash flow analysis for debt financing and project planning.
- e. To ensure that we are in accordance with our financial policy statement as we plan, manage and evaluate our programs to meet community rehabilitation needs.

7 8. To use corporate structures that best support our mission and goals.

PEDIATRIC INPATIENT PROGRAM

PROGRAM PLAN

**Barry Bowser, M.D.
Director**

March, 1985

II. Distinctive Program/Service/Produce characteristics

- A. Description of program - the inpatient unit will focus on the diagnostic group as defined in IA above. The unit is intended to accomodate eighteen (18) patients. TIRR's competitive advantage is:

1. name and name I.D. as rehabilitation program
2. rehabilitation experience
3. quality statistical areas
4. focused service
5. targeted marketing program with regional emphasis
6. pediatric rehab specialist

TIRR's weakness:

- patient environment
- family ammenities
- nursing staff's ability to shift to pedi-philosophy

- B. Barriers to competitive entry into market

TIRR has one of limited number of pedi psychiatrists in nation. Other programs will be limited because of the absence of a pedi-rehab doctor. Any competitor with a qualified physician can enter the competitive arena.

- C. R & D - None

- D. Reg. requirements/approach - none

- E. Fit - the pedi-inpatient rehab program has an excellent fit with all TIRR programs and patient care philosophies. Staff cross-over is reasonably achieved. Because of existing pedi program, this plan simply represents an incremental growth by 100 to 125% over three years.

III. Marketing strategy

- A. Target market - the target market region under consideration is the State of Texas. First phase marketing strategies will focus on a regional initiative. This will include efforts to reach the following:

1. CCS personnel
2. D.H.R.
3. Pediatricians
4. Orthopedists
5. Pedi-Neurologists
6. Neuro Surgeons
7. Parent groups

- B. Gross revenue/volume

Revenue Projections - 1 month

12 patients average daily census

12 X 30 days -- 360 patient days 1 month

360 X \$175 per diem = \$63,000 Gross Revenue 1 month

Auxiliary Services

P.T. \$72 X 12 treatments \$864 X 22 days = \$19,000

O.T. X 8 "

S.W. X 4 "

Clinical Lab

Psychology

C. Pricing - the majority of the patients should fall into the minimum bed rate. This is essential to maintain market share.

D. Marketing plan

1. T.V. - P. SA - paid otherwise
2. Newspaper program announcements - local, regional
3. Speakers - at parents' meetings
4. Paid advertisements
5. Pedi-conference - exhibit
6. Special mailings

E. Promotion - same as "D" Marketing Plan

IV. Operations

- A. Location - TIRR 2C, 2D (renovation required to update)
- B. Facilities and Equipment - no problems identified
- C. Process - rehabilitation team process would be the centerpiece of the program - coordination, communication, quality.

3-5 years

Staff Recruitment/expansion	Dr. Bowser
Physician support (fellow)	Dr. Bowser
Space Expansion	TIRR Expansion plan
Marketing	Marketing Plan (follow through)

V. Financial

See Addendum A, B, C

VI. Start up funds

None required

POST-POLIO PROGRAM

PROGRAM PLAN

**Lauro Halstead, M.D.
Director**

March, 1985

POLIO BUSINESS PLAN

II. Market Analysis

A. Potential Customers

1. All persons who have a diagnosis of Polio
2. Considerable interest is being generated because of the late effects of Polio
3. Price quality and program/service organization must be essential ingredients of the program. The potential customers are experienced rehabilitation service users; therefore, will have considerable discriminatory capacity.

B. Market Size and Trends

1. Market size will not increase. There are approximately 20 Polio victims per 100,000 population. This number should remain relatively stable over the next three years. There are approximately 400-600 post-Polio survivors in the Houston metropollex. All of this population is a potential user of TIRR services, appropriately priced, and has outcome and follow-up methods to insure follow through.

C. Competition - Strong regional competition has not materialized.

It is expected that national competition will emerge from Georgia Warm Springs -- Georgia Warms Springs will be formidable competition if we consider a national effort. However, TIRR should be stronger in financial, marketing, operating areas.

III. Distinctive Program/Service/Product Characteristics

- A. TIRR was founded during the Polio era of the 1950's - A targeted program could bring considerable publicity to TIRR. TIRR's history as a polio treatment center will be a major advantage.

MONTHLY VOLUME PROJECTIONS

(Outpatient Only)

N= .

26 new patients/month

26 Follow-up patients/month

M.D. Fees	26 patients (new)	x	\$150
	26 patients (old)	x	
Clinic Fees	52/month	x	
Radiology	52 x .15	x	
Laboratory	52 procedures (Pulm. Func.)	x	
	52 Blood Gas	x	
	52 EMG	x	
	52 x .10 Other Clinic =	x	
Physical Therapy	26 Physical Therapy Visits	x	\$ 72
Occupational Therapy	56 x .15	x	
P.T. Exercise	26 x 4 Times Month	x	
S.W. Evaluation	40 sessions	x	

MONTHLY VOLUME PROJECTION (IN PATIENT)6 Bed Unit

6 beds x 30 days = 180 patient bed days @ 70% occupancy =

144 bed days	x	daily per diem	_____
P.T.	x		
O.T.	x		
Lab	x		
S.W.	x		

Gross Revenue _____

- B. R & D Restrictions - None. Numerous research questions can be posed that would be of interest to the population targeted.
- C. Regulatory Requirements/Approvals - none
- D. FIT - the Polio program out-patient and/or in-patient will blend well into existing TIRR programs and services. There are no abnormal or atypical requirements.

IV. Marketing Strategy

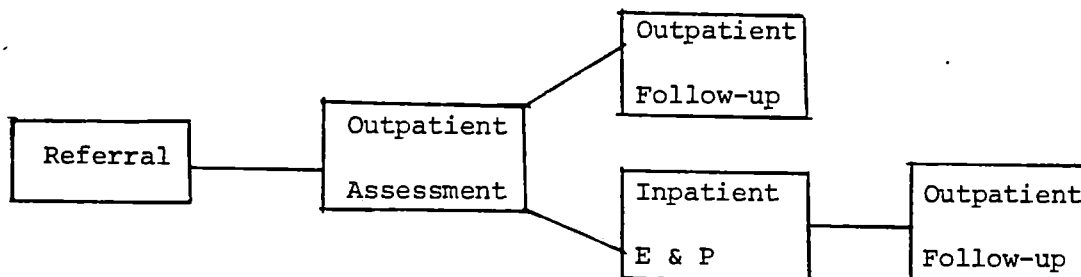
- A. Target markets - Texas and Southwest U.S.A.
- B. Gross Revenue Volume
- C. Marketing Plan
 - 1. T.V. spots (paid and PSA)
 - 2. 800 National number from Nationwide Information Exchange
 - 3. Visits to local chapters for education/consultation
 - 4. Mailings to target group
 - 5. T.V. Talk Show
 - 6. Regular mailings to target groups regarding clinical updates
 - 7. Patient follow-up group meetings
- D. Promotion - same as "C" above

V. Operations

- A. Location - TIRR Medical Center location
- B. Facilities
 - 1. Out-patient - sufficient space available in TIRR ambulatory care center and P.T. treatment area
 - 2. In-patient - will define six (6) bed unit when program demands geographic center
 - 3. P.T. equipment is being purchased to provide exercise component
 - 4. Program is underway - Efforts to meet patient backlog over next

three (3) months is primary concern. Effective 1/15/85, backlog is approximately two weeks. Therefore, interest in program may be decreasing.

C. Program Flow (Pattern of Services)



D. Labor Force

1. M.D. Resourcing will be complete by December, 1984
2. P.T. Resourcing will be on contract basis
3. All other manpower is available in TIRR system

IV. Management and Organization

A. Organization

M.D.

P.T.

P.A.

S.W.

Program Manager

All personnel resources are available for transfer to Polio program from other program areas

1. Staff has sufficient experience with target group to be viewed as experts

B. Key Staff

1. M.D. Leadership direction must be reconsidered over next 6-12 months. Program requirements may dictate alternate consideration.

VII. Timing

- A. The major thrust of the program will probably cease after 24 months; therefore, the period of January 1985 through December 1986 is most critical for program development

B. The goal is a smooth flow of patients for O. P. evaluation, out-patient follow-up and inpatient evaluation and treatment over the next two (2) years. Because of the public interest and alarmist feelings generated by the late effects of Polio, the ebb and flow of the program will be difficult to project beyond two years.

<u>Major Activities</u>	<u>1985</u>					<u>1986</u>		
	<u>Months</u>							
	<u>3</u>	<u>6</u>	<u>9</u>	<u>12</u>	<u>15</u>	<u>18</u>	<u>21</u>	<u>24</u>
Program Definition	—							
Service Definition	—							
Staffing Assessment		—			—			—
Program Leadership Analysis		—						
Marketing Initiatives		—			—			
Program Fully Defined	—							
Staff Trained	—							
Reimbursement Factors Resolved		—						

VIII. Start-up Funds

Projections for start-up funds will be generated after P & L, break-even analysis.

HEAD INJURY CENTER

PROGRAM PLAN

Robert Campos, M.D.
Director

March, 1985

Reach Epidemic Proportions

More than 100,000 persons will die this year as a result of head injuries and another 700,000 will be hospitalized for treatment of head trauma (5000 of these victims will be Texas residents). Some 90,000 of these patients will incur permanent impairments which preclude return to a normal lifestyle. These statistics clearly demonstrate a condition of epidemic proportions which is only now recognized as the "Silent Epidemic."

Head injuries are the leading cause of death for persons under the age of 34 and most of these people are victims of motor vehicle or sports accidents or gunshot wounds. However, other injuries may be the result of conditions such as encephalitis, cerebral hemorrhage or oxygen insufficiency.

Serious head injuries usually result in prolonged loss of consciousness or coma. While it may be brief, lasting only a few minutes, it may extend to days or weeks. If the period of coma is brief, recovery to full or nearly full function is likely, but as time in coma lengthens, emergence to a fully alert state can take a long time. Intellectual impairment, speech problems, behavioral disorders and related physical disabilities can become realities. The individual and his/her family face a period of rehabilitation that can extend for years.

Injuries of this nature happen with a devastating and unexpected swiftness. Prior to 1982, in Texas, there was no public or private agency available to provide emotional support, advice, guidance, or other type of help for those who are suddenly faced with both immediate and long-term effects of head injury.

In an effort to meet the needs of victims of the "Silent Epidemic" and their families, the Texas Head Injury Foundation was organized in 1982 by a small group of lay persons and health-care professionals. This organization is dedicated to the restoration and maintenance of the dignity of life for the head-injury sufferers and their families.

The non-profit foundation strives to meet the urgent needs of developing programs for public awareness and education as well as supporting research, rehabilitation, and providing family guidance. Funds to accomplish these tasks come from individuals, business, and industry as well as public donations and grants. Drawn from the community at large, an advisory board serves in a consulting capacity and provides suggestions and guidance for program development, establishment of organizational priorities, and development of positive community relations.

Meeting The Need - Our Goal

The Texas Head Injury Foundation concerns itself with all aspects of the problem of head injury, from prevention to late rehabilitation. The goals of the organization are to:

- 1. Promote the general welfare of individuals suffering intellectual and/or behavioral disability by reason of head injury;
- 2. Further the advancement of any program dealing with the prevention and immediate treatment of head injuries, rehabilitation and long-term care of individuals suffering the consequences of head injury;
- 3. Provide a centralized resource for parents, spouses, and others responsible for the care of head-injured persons, including information on the rights of handicapped as well as a list of facilities for acute, intermediate and long-term care;
- 4. Promote legislation and lobby for the benefit of head-injured people on the federal, state and local levels;
- 5. Provide emotional support to families and others responsible for the care of their head-injured loved ones;
- 6. Develop, or help existing facilities develop permanent or transitional living facilities for head-injured persons with the express goal of integrating as many as possible into the mainstream of community life;
- 7. Develop new facilities or help existing facilities specifically designed to train, educate and physically rehabilitate the head-injured individual with the express purpose of making those individuals as independent as their disability allows;
- 8. Provide financial support for head-injured individuals when community funds, whether federal, state or local, together with the individual's private funds are inadequate to provide for the needs of that individual;
- 9. Support recreation and social activities for the head injured;
- 10. Encourage the formation of family support groups throughout Texas as chapters of this organization, and to cooperate with other organizations in carrying out its goals; and
- 11. Solicit and receive funds for the accomplishment of these goals.

For more information, please write or phone.
The Texas Head Injury Foundation
2600 South Gessner, Suite 410 Houston, Texas 77063 (713) 784-6478

Be A Participant

Since its inception, the benefits of the THIF has been experienced by many as chapters were formed in Dallas, Fort Worth, Amarillo, Lubbock, Galveston, and Waco to meet as many of the overwhelming needs of head-injured persons as possible. However, all facets of the THIF program need expanding and our ability to meet this demanding challenge is mainly dependent on financial support from the private sector. Won't you become a regular participant in this program of human restoration and support? All donations are tax-deductible and can be made in memoriam or in commemoration.

Membership categories are:
Single Membership \$10.00
Family Membership \$15.00
Professional Membership \$15.00
Supporting Membership \$75.00 plus
Lifetime Membership \$250.00
Corporate Membership \$1,000.00

MEMBERSHIP SUPPORT

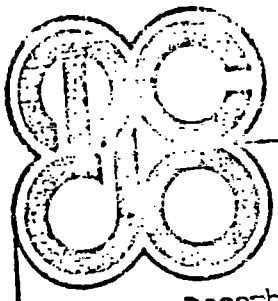
Mail to: 2600 South Gessner, Suite 410, Houston, TX 77063

Name _____	Phone _____
Address _____	
City/State/Zip _____	
Amount \$ _____	for _____ membership (type)
In ☐ commemoration ☐ memoriam of _____	
Signature _____	

THE	BOARD OF DIRECTORS	This
TEXAS		year
HEAD	CHARLES W. HAYNES Chairman, Family Member, Houston, Texas	700,000
INJURY		people
FOUNDATION	DAN MORRISON, M.D. Director, Physical Medicine and Rehabilitation, Houston, Texas	will
		suffer
2600 South Gessner, Suite 410	TOM LEWIS Southern Regional Director, Outpatient Surgery Clinic, Houston, Texas	from
Houston, Texas 77063		THE
(713) 784-6478	MARY ELLEN HAYDEN, Ph.D. Neuropsychologist, Houston, Texas	SILENT
		EPIDEMIC
	CATHY RAY HARDY, Ph.D. Psychologist, Dallas, Texas	
	ANNE W. BROWN Hospital Executive Director, Houston, Texas	
	DOROTHY DOAN Family Member, Tulsa, Texas	
	MARIA D'ANTONI Speech Pathologist, Houston, Texas	
	DEBBI FAULK Family Member, Beaumont, Texas	

Ed. Eckman

*Susan
Lorber
Lorber*



MEDICAL CENTER DEL ORO HOSPITAL

8081 GREENERIAR DRIVE HOUSTON, TEXAS 77054 713-790-8100

December 29, 1983

Mary Swope
Vice President, Clinical/Rehabilitation Service
Good Samaritan Medical Center
8000 Forest Avenue
Zanesville, Ohio 43701

Dear Mary:

Shortly before Christmas, we discussed briefly the Head Injury Rehabilitation Program at Medical Center Del Oro Hospital. The program includes an intensive neuropsychological evaluation and treatment on an inpatient and outpatient basis.

After the traditional therapy is completed, our Neuropsychologists have a third phase program for the vocational preparation of head injured adults. The program is new and has been tried in only a few centers around the United States, however, the results appear to increase a head injured patient's chances to get a job and keep a job by as much as 600%!

Attached is an abstract presentation that Dr. Hayden can discuss at the AHA conference next fall.

If you have any questions or need any additional information, please feel free to contact me at (713) 790-8150.

Sincerely,

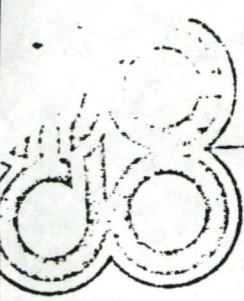
Randy Johnson
Rehabilitation Coordinator

PROJECT RE-ENTRY: AN OUTPATIENT TREATMENT MODEL
FOR TRAUMATIC BRAIN INJURIES

Mary Ellen Hayden, Ph.D.
Charlene F. Madison, Ph.D.
Dennis A. Helffenstein, Ph.D.
Medical Center Del Oro Hospital
8081 Greenbriar
Houston, TX 77054

Severe traumatic brain injury results in long term disability in approximately 90% of those afflicted. This long term disability is the result of non-physical (ie; cognitive, interpersonal etc.) deficits in 80% of cases. Rehabilitation of such deficits has, therefore, become the focus of many residential and outpatient programs. Project Re-Entry is an outpatient treatment program for individuals who have not been able to re-integrate into society after more traditional programs. It simultaneously rehabilitates cognitive, interpersonal and emotional coping skills by using a group treatment format over a 20 week period. Vocational skills progressively become the focus of the program toward the end of the initial 20 week period. Patients are subsequently placed on unpaid job trials within the hospital or in other settings for another three to six months. Job placement within the community then occurs. This outpatient model provides an effective, cost efficient program for treatment of brain injured individuals.

The presentation will present the model and outcome statistics on the first PRE class.



MEDICAL CENTER DEL ORO HOSPITAL

8031 GREENBRIAR DRIVE HOUSTON, TEXAS 77054 713-790-8100

PROJECT RE-ENTRY

Project Re-entry is for the brain injured adult who has completed a traditional rehabilitation program but who has had difficulty becoming an active, productive member of society.

The purposes of the program are

- TO MAXIMIZE
 - cognitive skills
 - interpersonal skills
 - emotional coping skills
- TO DEVELOP meaningful life activities, vocational and/or avocational, which will allow individuals to become productive members of society
- TO PREVENT the profound long term psychological and sociological problems which frequently result from the inactivity and isolation following head injury

Project Re-entry is an outpatient program which requires a full-time, one year commitment from an individual. Modeled after the program developed at the New York Institute of Rehabilitation Medicine, this program has proved to be very effective in re-integrating head trauma victims back into more satisfactory lifestyles.

Family education and counseling are an integral part of the program. Families will be requested to spend several weekends throughout the year in an intensive educational/counseling program.

Admission requirements:

1. Ages 18 to 55 years
2. Behaviors currently pose no danger to self or others
3. Free of alcohol and drug abuse or addiction
4. Independent in basic self-care skills

Project Re-entry is staffed by specially trained professionals under the direction of Daniel P. Morrison, M. D., Director, Department of Physical Medicine and Rehabilitation, and Mary Ellen Hayden, Ph. D., Director, Department of Neuropsychology.

Project Re-entry is an attempt to provide optimal care as economically as possible so that it can be made available to a maximum number of head trauma patients.

For more information about Project Re-entry, its cost, possible insurance coverage, local living and transportation arrangements, contact Dr. Daniel P. Morrison, 713-790-8344.

**TIRR**

THE INSTITUTE FOR REHABILITATION AND RESEARCH

in the Texas Medical Center / 1333 Moursund Avenue / Houston, Texas 77030 / (713) 797-1440

MEMORANDUM

TO: Bob Baker

FROM: R. Edward Carter, M.D. *REC*
Medical Director

DATE: March 16, 1984

RE: Closed Head Injury Program

I recently had excellent feedback from personnel at one of our local trauma centers, most of whose patients go to Plaza Del Oro Hospital. The summation of their perception of the weakness of TIRR in this area are as follows:

- (1) Medical Director - leadership
- (2) Trauma Liaison Nurse
- (3) Neuropsychologist
- (4) Team approach that is integrated and coordinated
- (5) Organized followup program
- (6) Improve this ability via medical publications, presentations, research, etc.

To: David Stock
From: Don Lehmkuhl

FILE NAME: HIM003
DRAFT: 18 December 1984
THE INSTITUTE FOR REHABILITATION AND RESEARCH
HEAD INJURY REHABILITATION PROGRAM

REPORT TO TIRR STRATEGIC PLANNING COMMITTEE

I. Summary of sections below.

The TIRR Head Injury Program is just embarking on a period of revision and expansion. The appointment of a Head Injury Program Coordinator, Don Lehmkuhl, PhD, on 15 October 1984, has permitted the Head Injury Team to begin a process of self-study. On 13 December the Team participated in a retreat to consider goals for improving the Program during 1985. A summary of topics discussed in that retreat appears in Appendix A. Team members have been organized into task forces to work on the first four projects selected from a list of proposed goals (Appendix B). We believe that the TIRR Head Injury Rehabilitation Program has the potential to develop one of the best comprehensive brain injury treatment and follow-up services in the world. We propose to develop plans and strategies and to seek the financial, structural and human resources necessary to become a leader in this field.

II. Market Analysis

- A. Potential customers. Who are they? Where are they? Why do they buy? When do they buy? What do they expect of price, quality, service?

Definition of Target Population: Serious injury to the head is a national health problem with substantial physical, emotional and financial consequences. Two recent national surveys (Kraus, 1980; Kalsbeek et al, 1980) suggest that each year in the United States approximately 400,000 persons require hospitalization for treatment of head injury and 30,000 to 40,000 of them require rehabilitation. The statistics indicate that twice as many men as women sustain head injuries, and the majority are between 15 and 24 years old. Motor vehicle accidents are the single most frequent cause of head injuries; therefore, many of these patients sustain multiple-system trauma that requires the skills of many health care specialists to treat the multiple injuries during long periods following the accident.

- B. Market size and trends. Now and at 5, 10 years out.

A study (Progress report of Houston/Galveston Comprehensive Trauma CNS Center, 1982) of morgue and patient discharge classification by 79 hospitals in the Houston/Galveston Region during a 12 month period from October 1979 to September 1980 listed 5402 patients with head injury, of whom 591 died of their head injury before admission. The disposition of the survivors is unknown, but a substantial number of them (estimated at 500 patients) would need comprehensive rehabilitation services. A portion of that number represents the group of patients potentially eligible

*Incidence
is down.*

for services such as we provide.

- C. Competition. Who are our competitors and what are their strengths and weaknesses, potential market share? How do their services compare with ours in price, scope, results. What are their strengths and weaknesses in the financial, marketing, operating areas.

Plaza Del Oro Medical Center Hospital is our primary competitor in Houston providing comprehensive rehabilitation services for patients with brain injury. A few other local hospitals such as Houston Northwest Medical Center, Memorial Hospital and St. Anthony Center also offer comprehensive rehabilitation service for brain-injured patients. Del Oro has a strong clinical neuropsychology program which is highly touted to families of prospective patients; it has 40 beds dedicated to inpatient brain injury rehabilitation and a satellite outpatient facility just off the south loop of I-610 with abundant free parking. TIRR, on the other hand, has a marginal neuropsychology program, very limited outpatient services (staffing shortages) with limited and expensive parking. In addition, we do not have a specific system of organized follow-up of patients after discharge. We do have a unique and potentially strong selling point in the form of diagnostic and restorative services offered by the clinical neurophysiology laboratory. We also have greater potential to conduct research designed to improve the quality of services provided to patients with brain injury.

Other competitors include those in Texas: Dallas Rehabilitation Institute, Swiss Avenue Hospital (Baylor in Dallas), Warm Springs (Gonzales) and Breckenridge Hospital (Austin); those in other states: Craig Hospital (Denver) Casa Colina (Pamona, CA), Rancho Los Amigos (Downey, CA), Santa Clara Valley Medical Center (San Jose, CA), Rehabilitation Institute of Chicago, The Greenery/Tufts-New England Medical Center (Boston), and Braintree Hospital (Braintree, MA). Each of these have strong clinical neuropsychology service components and linkages to outpatient programs designed to enhance continued upgrading of functional mobility, cognitive functions, communication skills, social interactions, recreation and vocational abilities. We have a long way to go in matching (let alone exceeding) the comprehensiveness and integration of such programs.

Information about the cost of services provided to patients in the TIRR Head Injury Program or in similar programs offered by other rehabilitation centers has not yet been gathered.

III. Distinctive Program/Service/Product Characteristics

- A. Description of Program/Service/Product -- what makes it attractive to the market in comparison with others. Areas of competitive advantage.

Operation of the TIRR Head Injury Service-- Patients with head injuries were first admitted to The Institute for Rehabilitation and Research in 1966. At that time the medical team working with these patients included a neurologist, occupational therapist, physical therapist, registered nurse, social worker, and speech therapist. In addition a neurosurgeon and other physicians from the Baylor College of Medicine were available for

consultation. In 1967, the need to control the hospital environment of these patients who are often agitated or confused was recognized and a patient care area was designated specifically for patients with head injuries and cerebrovascular accidents.

In 1969 the Department of Clinical Neurophysiology was established at TIRR. Updated diagnostic and prognostic techniques utilized by the neurophysiologists, engineers, and physicians within this department have resulted in the improvement of the overall assessment and management of head-injured patients. New knowledge from research projects has offered patients at TIRR innovative rehabilitation opportunities.

As TIRR considered expansion of services and beds, a multidisciplinary planning committee was established in 1981 and, through weekly meetings, began to plan strategies and protocols for the head injury program. Team members attended several national conferences on traumatic head injury, on models of care for head-injured patients, and on cognitive retraining; in addition, team members visited several rehabilitation centers in California which offer programs for brain-injured patients.

In the past two years, the Head Injury team has expanded to include other health professionals - a pharmacist, therapeutic recreation therapist, vocational counsellor, and part-time neuropsychologist (a graduate student enrolled in Dr. Shear's academic program at the University of Houston).

Statistics-- Number of patients admitted for comprehensive head injury rehabilitation from 1980-1983:

	ADULTS	CHILDREN
1980	16	4
1981	16	6
1982	22	9
1983	19	6

Patient Referral and Admission

The referral may or may not be initiated by physicians. Nurses, social workers or other health professionals may start the referring process which is subsequently approved by the physician.

Present Sources of Referral include:

- Hermann Hospital
- Other hospitals in the Texas Medical Center
- Other hospitals and agencies throughout the State of Texas
- Hospitals in Louisiana and several bordering states
- Patients from other states and foreign countries

Referral Screening

The Admission Department reviews the applications for admission and sorts them out. The chairman of the Admission Committee refers the application and data to the physician and social worker of the Head Injury Team for

review.

Alternatives in Disposition:

- 1) Admit (after financial screening)
- 2) Secure additional data
- 3) Visit patient if in a nearby hospital when some issues are not clear.
- 4) Clinic visit (for assessment of rehabilitation needs and potential)
- 5) Contact family to secure additional information, to assess the home situation and to instruct family regarding function of the hospital and initiation of discharge planning.
- 6) Hospital tour with social worker to see the nursing and therapy areas.
- 7) Advise family about securing possible types of sponsorship.
- 8) Decline admission for unsuitability of patient for rehabilitation or for other reasons.
- 9) Refer patient for specific therapy (such as occupational, physical or speech therapy) on an outpatient basis.
- 10) Schedule admission at a later date (less priority).

Admission DAY:

- 1) Admit patient to Station VI (accompanied by social worker)
- 2) Nursing staff introduce themselves to patient and family.
- 3) Nursing assessment (with examination of the patient, checking-in the patient's clothing and equipment and personal valuables).
- 4) Social worker to see patient and family as part of the initial evaluation
- 5) Physician examines patient and may discuss treatment plan and prognosis with family. Referral orders to P.T., O.T. and Speech or whichever are then written.
- 6) O.T., P.T. and Speech therapist initiate evaluation and treatment.

Patient Rounds

1. Initial team rounds for setting goals takes place during the first 1 to 1 1/2 weeks of hospitalization.
2. Initial goal setting conference in approximately two weeks after admission. Members of the family and the team participate. Items to be discussed include: progress and short-term goals, family education, weekend passes, discharge planning, degree of emotional adjustment.
3. Formal or informal conference with the team or some of its members may be held as the need arises.
4. Regular weekly patient rounds with participation of all team members. The social worker contacts family as necessary to keep them informed of progress. Any member of the team may be contacted directly by the family.
5. Mini Rounds - Representatives of Clinical Neurophysiology and nursing make bedside rounds with the physician to elicit problems, assess changes and needs and to include the patient's views in the treatment plan.

Educational Program

An ongoing interdisciplinary process throughout the patient's hospitalization:

- Involves patients, families and TIRR staff.
- Covers issues such as disabilities, ways of adjustment, techniques of the rehabilitation program and anticipated results. Emphasis is placed on function, safety and independence.
- Staff development programs.
- Make patients and family aware of the Head Injury Foundation and other resources available in the community.
- Dissemination of information to the community to enhance its involvement.

Discharge Conference - The entire team meets with the family and the patient to discuss:

- Achievements
- Additional goals
- Reasonable expectations
- Treatment plan:
 - a) In the area of patient's residence
 - b) At TIRR or other facility near home
 - c) Home program
 - d) Clinic visit (follow up at TIRR)
- Follow up by family physician (medical problem)
- Employability or needs for financial sponsorships
- Vocational, prevocational or placement in special training or cognitive rehabilitative programs
- Equipment needs (projected into the future)
- Telephone contacts (O.T., P.T., speech, social worker, physicians, nursing, staff, consultants)

Competitive Advantage

TIRR has a modest competitive advantage in the form of new, attractive facilities for housing patients admitted to the Head Injury Rehabilitation program. We also have therapists certified in the use of Neuro-Developmental Treatment (NDT). The ability to manage respirator-dependent patients and the services of the clinical neurophysiology laboratory for assessing and treating disorders of motor control and abnormal sensation are definite advantages.

- B. Barriers to competitors entry into the market. Patents, copyrights, other conditions that discourage competitors from entering the field -- exclusive arrangements or factors that result in long lead times from conception to delivery.

There appear to be few barriers to prevent the entry of other institutions into the Head Injury Rehabilitation market. Many of the hospitals which provide the initial care for neurotrauma appear to be keeping the patient longer and are establishing rehabilitation units to care for them. The development of close affiliation with local and regional trauma centers

coupled with our demonstration to physicians in those centers that TIRR can handle the difficult cases better than others and can arrange for appropriate outpatient opportunities, should assure that we continue to get referrals from those trauma centers.

C. R&D requirements to bring program/product/service to market

Immediate recruitment of a competent and respected clinical neuropsychologist to develop a strong program of cognitive retraining and behavioral management which is integrated with the therapeutic efforts of other disciplines and with daily nursing care. Continue to strengthen the relationships we have established with the Texas Head Injury Foundation and with the University of Texas Division of Neurosurgery. Explore possibilities for developing relationships with other neurotrauma centers. Develop a workshop for informing third party payers and their representatives of the quality of the TIRR Head Injury Rehabilitation Program. Prepare grant proposals to support research projects conducted by members of the Head Injury Team and prepare papers for presentation at national conferences to promote recognition of TIRR as a leader in this field.

D. Regulatory requirements/approvals

A National Advisory Committee on Standards for Brain Injury Programs has prepared a list of standards which is to be recommended to the Commission on Accreditation of Rehabilitation Facilities. The Committee expects that these standards will be utilized in CARF accreditation activities beginning in the summer of 1985. Compliance with these standards will be necessary to be recognized as offering comprehensive rehabilitation services for patients with brain injury. The TIRR Head Injury Team has reviewed the proposed standards and found several areas in which we will need to upgrade our services in order to comply. One is to "--have a formalized relationship with or be part of an acute hospital capable of caring for individuals with neurotrauma." Another is "--formally organized program should be provided for education, support, and advocacy for patients and their families." Another is "--core team should not be rotated from the dedicated service area in such a manner as to disrupt continuity and experienced, competent provision of services." Of course, the standards also call for the fulltime services of a clinical psychologist/neuropsychologist.

E. Fit with present programs/products/services

The recent designation of Station VI as the home of the Head Injury Program has greatly reduced the problems of providing quality care to patients with disorders of cognitive (as well as physical) functions. Thus the staff on Station VI can be oriented, trained and educated to deal effectively with the special problems associated with the care of these patients. Further expansion of the Head Injury Program to permit dedication of all 22 of the beds on that unit will reduce the number of problems created by housing patients with other types of

disabilities and other types of needs on that unit.

IV. Marketing Strategy

- A. Target Markets. Specific market segment for concentrating resources to carve out niche
- Highest priority needs to be devoted to education of the physicians, rehabilitation nurses and agents of third party payers regarding the strengths that the TIRR Head Injury Rehabilitation Program has to offer. We need to upgrade the image apparently held by some local physicians and rehabilitation nurses who are in a position to make referrals that TIRR currently offers a well-organized, cost-effective, innovative program for patients with brain injuries. Second priority should be directed to the orientation and education of existing patients and their families, former patients and their families and the lay public.

- B. Estimated Net Revenue Volume from programs, services or product sales over next 2, 5 years -- which data are hard, which soft.

Information on this item has not yet been obtained.

- C. Pricing. How pricing strategy will enable us to penetrate the market, maintain and increase market share in a competitive environment, cover all expenses

Information on this topic has not yet been developed.

- D. Marketing Plan. How to generate referrals, sales? Via intermediaries? Networks? Use direct contact, calls? How many people? What education and experience? What degree of efficiency? How many calls to get a referral?

We need to improve the communication between TIRR and those physicians who presently refer patients to the Head Injury Rehabilitation Program. They should routinely be sent a progress report on their patient which is succinct and informative. The discharge summary should also be timely and informative. Additional referrals should be generated by improving the visibility of the Head Injury Program in the community through increased participation in professional meetings, conferences and social activities involving physicians who care for the patient in the first days following the head injury. Dr. Lehmkuhl will play a major role in these efforts, assisted by Drs. Campos, Sharkey, Dimitrijevic, Spencer and Carter.

- E. Promotion. How to generate awareness of program/service/product among potential customers?

Awareness of the TIRR Head Injury Rehabilitation Program will be enhanced only by active participation of members of the program in local, regional and national meetings attended by staffs of local

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and regional trauma centers. We must also demonstrate (by performance) to those professionals who do refer patients to TIRR that we are knowledgeable, efficient, organized, innovative and cost-effective.

V. Operations

A. Locations. Is another location needed? Where? Why?

We need to consider the possibility of developing a satellite location for providing outpatient services of the usual type for continuation of work on physical impairments (physical therapy, occupational therapy, speech therapy) as well as cognitive retraining, behavior modification socialization and vocational skills. Such a facility should be easily accessible to the public and have ample free parking. It might also offer day care and respite care for selected types of patients.

B. Facilities and Equipment. What will be referred? At what cost? Lease or buy? Timing.

A satellite facility would need a minimum of expensive equipment commonly found in the primary rehabilitation center, but it would need to be staffed with competent therapists and counselors. The financial details of such an undertaking have not yet been determined.

C. Process. How will the program work or how will the product be produced?

This topic is currently under discussion.

D. Labor Force. Costs. Availability of enough people with the right skills. Cost of additional training. Timing of acquisition.

A full-time neuropsychologist with interest and competence to provide clinical services to patients with cognitive deficits, including patients with socially unacceptable behavior, must be recruited. Additional therapists, nursing staff and counselors will also be needed. We need to plan and implement a staff orientation and training program to upgrade the knowledge and skills of persons providing health care services to patients with brain injury. Details regarding the types, numbers and cost of such additions are yet to be determined.

VI. Management and Organization

A. Organization. Team members, how skills complement, balance. Experience with program/service/product being developed.

Administrative Structure-- The attached table of organization depicts the general lines of responsibility for implementing the Model Regional Head Injury Rehabilitation System. Dr. Campos will serve as clinical director of the Head Injury Rehabilitation Service and Dr. Carter will

serve as liaison to assist in establishing linkages with trauma centers and community agencies concerning the integration of initial care, rehabilitation care and follow-up care of patients with head injury. The day-to-day operation of the Model Regional Head Injury Rehabilitation System will be administered by Dr. Lehmkuhl. He will: 1) supervise the collection, entry into computer files, retrieval and analysis of data regarding each of the research projects; 2) communicate staffing needs to each of the TIRR clinical departments to ensure that all needed services are available to patients admitted to the Head Injury Rehabilitation Service; 3) participate in negotiation of informal arrangements and contracts between collaborating agencies; 4) administer the budget allocated for the operation of the Head Injury Rehabilitation Service; 5) prepare reports regarding the operation of the Head Injury Rehabilitation Service.

B. Key Staff. Strengths, weaknesses. Plan to cover gaps.

1. Robert J. Campos, M.D., a Neurologist, serves as Medical Director of the Head Injury Program. He has been an attending physician at TIRR and actively involved in the assessment and medical care of patients with neurological disorders, including head injury, since 1966. His responsibilities are to: write prescriptions for rehabilitative services and equipment; enforce the recommendations made by the team as a planning group; discuss with patient and family issues such as prognosis, plans, reasonable expectations and employability; direct the patient's rounds; provide opportunities for informal discussions with team members regarding a) the structure and future plans of the Head Injury Team and b) the educational aspects that would be beneficial to the team members; participate in quality assurance activities; monitor outcomes of therapy with the view to contain patient care costs and to increase the effectiveness and efficiency of the rehabilitation process; assess patients in the Outpatient Clinic to establish rehabilitation needs and an adequate program based on reasonable expectations; visit patients in other hospitals, both in and out of Houston, when the rehabilitation potential of the referred patient and the reasons for the requested admission are not clearly established; participate in the activities of state and local chapters of lay and professional organizations to assist in the planning and achievement of specific goals; contribute to the educational needs of patient's families, professional staff (other than the team members), students and interested civic groups in the community; establish professional contacts with lawyers, insurance companies, health care providers and state agencies to improve the understanding and implications of common areas of disability of the head injury patients; promote and participate in clinical or other types of research oriented toward improvement of knowledge, treatment and rehabilitation of the head injury patient; provide to particular agencies or civic groups advice in the area of prevention and be a liaison with the administration regarding such items as meals, space, and equipment.... especially where misinterpretation, errors or inadequate communication exist.

2. R. Edward Carter, M.D., an internist, has been an attending physician at TIRR since 1960 and will assist in promoting the Head Injury Program

He began organization of the Spinal Cord Injury Center in 1961 and was the original Project Director of the Regional Spinal Cord Injury grant for the first eight years. Dr. Carter was a Founding Member and First President of the American Spinal Injury Association and currently is the Vice-President for North America of the International Medical Society of Paraplegia. His primary concern will be to assist in establishing effective linkages with neurotrauma centers and community agencies and developing that network.

3. TIRR Head Injury Program Administrator

Don Lehmkuhl, Ph.D. has been on the staff of TIRR and a faculty member of the Departments of Rehabilitation and Physiology since 1976. His background includes many instances of successfully guiding and managing projects and activities requiring the cooperation of representatives of several disciplines. As program administrator, he will oversee the marshalling of human and financial resources needed to operate the program and engage in negotiations with directors of the various clinical departments to ensure that adequate staff with suitable qualifications and experience are serving on the Head Injury Team to meet service, research and educational commitments of the program. In addition, he will assist the Co-Principal Investigators in developing and maintaining informal and formal linkages to other units in the proposed Head Injury Rehabilitation System. Dr. Lehmkuhl will supervise and facilitate the development of the data base hardware and software capabilities, as well as oversee development of a mechanism for collecting and entering the results of the tests and observations made on the head-injured patients.

4. Other Members of the Head Injury Team

a. Mary Alfred, R.N. has had eleven years of experience in rehabilitation nursing service administration at TIRR. Ms. Alfred will serve as the Head Nurse on the Head Injury Unit.

b. Kathleen Pace, R.N. has had five years of experience in neurotrauma nursing and serves as a clinical educator and neuro-nurse specialist on station VI.

c. Marilyn Emerich, P.T., is the Associate Director for Clinical Services in the Department of Physical Therapy at TIRR where she has been employed since 1980. Ms. Emerich has had extensive training in several therapeutic approaches to patients with brain injuries.

d. Donna Woodworth, P.T., is supervisor of therapists working with brain-injured patients. She has four years of experience and advanced training in NDT procedures.

e. Roxan Ballweber, O.T.R., is the Associate Director for Occupational Therapy and supervises occupational therapists working on the Head Injury unit. She has seven years of clinical experience, two in head injury.

f. Theresa Gregorio, O.T.R., is a senior occupational therapist with

four years experience on the spinal cord injury unit and one year of experience on the head injury unit.

g. Beverly Wright has been employed by the Speech and Hearing Institute, University of Texas Health Science Center since 1983. Ms. Wright, a speech and language pathologist, is primarily responsible for provision of services to the patients in the Head Injury Program at TIRR. She has four years experience with the brain injury population.

h. Diane Carter, M.S.W., the social worker assigned to the Head Injury Team, has been employed at TIRR for three years. Diane is a member of the Advisory Committee of the Texas Head Injury Foundation.

i. Amy Nelson, T.R.S. has three years experience as a therapeutic recreation specialist and is certified by the National Parks and Recreation Association. ~~specialist to be assigned to the Head Injury Team.~~

j. Margaret Kanellos has been the Director of Vocational Services at TIRR since 1982. Prior to assuming that position, Ms. Kanellos was a liaison counselor between the Texas Rehabilitation Commission and TIRR.

k. Leslie Tanner has been the Associate Director of Pharmacy at TIRR since 1982. Mr. Tanner was the first pharmacist to join the Head Injury Team.

4. TIRR Consulting Staff

a. Jesse H. Dickson, M.D. is the senior orthopedic consultant at TIRR as well as Chief of Surgery. Dr. Dickson was associated with and later replaced Paul Harrington, M.D. in these positions. He is currently Associate Professor of Orthopedics at Baylor College of Medicine.

b. Paul Sharkey, M.D. has been a neurosurgeon consultant to TIRR for over twenty years. He currently works half-time with the clinical neurophysiology program and is involved with the investigation and treatment of pain and spasticity in patients with neurological disorders.

c. Samuel Stal, M.D. is Assistant Professor of Plastic Surgery at Baylor College of Medicine and the plastic surgery consultant for both inpatient and outpatients at TIRR.

d. J. David Wright, M.D. and J. Keith Light, M.D. Dr. Wright is our senior urology consultant. Dr. Light is in charge of our clinical urology program as well as Director of the Urodynamic Laboratories.

5. Other Professional Personnel

a. Milan R. Dimitrijevic, M.D., D.Sc., is an internationally recognized expert in spinal cord injury, spasticity and spinal motor control, and is actively involved in numerous research projects in Europe and the United States. In addition to founding two clinical programs (the Institute of

Clinical Neurophysiology, School of Medicine, University of Ljubljana, Yugoslavia, and The Department of Clinical Neurophysiology, TIRR, Houston), he has assembled an international consortium of investigators interested in problems of motor control in man. His expertise has been essential in instigating complementary research programs, not only in the two aforementioned institutes which he founded, but also in established neurophysiology laboratories in Southampton, England; in Linkoping, Sweden; in Uppsala, Sweden and Warsaw, Poland to mention a few. Dr. Dimitrijevic has contributed to the understanding of the central mechanisms of spasticity, and pioneered afferent electrical stimulation for the restoration of movement and reduction of spasticity in paralyzed muscles.

b. Jaime R. Cuzzi, Director of the TIRR Information Service Department has been at TIRR since 1966. He is a talented mathematician and computer expert and will be a key provider of consultative services to develop a network for sharing results of tests on patients.

c. C. Don Rossi, M.S., a biostatistician on the staff of the TIRR/Baylor Rehabilitation Research and Training Center, joined the Institute in 1977 and has been an invaluable source of information and counsel concerning research design and the statistical treatment of the results of clinical research.

d. Thorkild Engen, C.O. is a nationally and internationally known orthotist who has directed the clinical and research programs in orthotics at TIRR since its opening in 1959.

e. Thomas Garrison, D.P.M. is the podiatrist who sustained an accidental paraplegia at the age of 14 and was a patient at TIRR. After completing high school and college, he graduated from podiatry school in San Francisco and now has a part-time private practice and is the part-time podiatry consultant to the clinical services at TIRR.

f. Nancy Enderlein, R.N. has been employed for the past year as the spinal injury Trauma Liaison Nurse. She consults on every spinal cord injured patient referred to TIRR from our affiliated trauma centers. She will help in orienting the new head injury Trauma Liaison Nurse.

g. Billie Sills, R.N. is Assistant Administrator - Nursing Service. TIRR currently employs over 50 registered nurses. Ms. Sills is responsible for the quality of care on the Head Injury Unit. She was previously associated with a neurotrauma center in Miami.

h. Karen Zinszer, R.N. is employed as the spinal cord injury Follow-up Coordinator and has worked at TIRR for three years. She has helped develop and organize our follow-up program.

i. Connie Miller, R.N. was employed as our Spinal Cord Trauma Liaison Nurse for two years. Recently, she has assumed the position of Director of Outpatient Clinics.

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VII. Timing

Major activities over 3-5 years and who will do what.

This topic is under discussion.

VIII. Financial

The following areas are still to be developed:

A. Pro formas, P&Ls and balance sheets

B. Cash flow projections

C. Breakeven analysis

IX. Startup Funds

A. How much now and over 3-5 years. What if underestimated? How will funds be used? Financial structure (Debt/Equity). Terms. This content not yet determined.

APPENDIX A

THE INSTITUTE FOR REHABILITATION AND RESEARCH HEAD INJURY REHABILITATION PROGRAM

RESULTS OF DELIBERATIONS DURING HEAD INJURY STAFF RETREAT 13 DEC 1984

Participants:

Robert Campos, MD
Lyn Emerich
Don Lehmkuhl
Amy Nelson
Beverly Wright

Diane Carter
Theresa Gregorio
Patty Lee
Kathleen Pace

Roxan Ballweber
Mary Beth Friedman
Jeanne Nisbeth
Donna Woodworth

Absent: Les Tanner

SUMMARY OF GOALS (Categorization of goals elicited during "brainstorming" session; full list appears later in this document)

1. Policies and Procedures - Protocol

Behavioral Management, structure of environment, define roles and responsibilities of team members, define character of head injury team, rounds, strategy for increasing consistency of care.

2. Family education - Plan for involving families; information booklet

3. Patient/therapeutic milieu

Therapeutic Recreation programs, signs, costs, behavioral management, structure of environment, dietary, transportation, mixing patient population on station 6, neuropsychology treatment services, mechanism for allocating and monitoring patient privileges

4. Staff Development

Journal club, improve behavioral management, orientation, hospital-wide orientation, specifying functional goals for patients

5. Staff Needs

Neuropsychology, carry-over of treatment, orthotic devices, rounds, team meetings, more staff, consistent assignment to head injury service, coordination of effort on treatment goals; negotiation of changes in patient's schedule

6. Public Relations

Admissions, in Medical Center, brochure, workshop, increase communications with referring sources, videos, pictures, cost of care

7. Outpatients

Carryover of treatment, development of alternative programs, team integration

HIRET1

of outpatients, satellite programs, inadequate number of staff, transportation and parking

8. Outcomes/Data Base

(Margaret Ann Wilkerson), developing profile, pictures, videos, referring sources, evaluation form

9. Research

Individual disciplines, program as a whole

STRENGTHS OF CURRENT HEAD INJURY PROGRAM

- physical facilities
- some offices and treatment areas in close proximity to patient rooms
- support of administration (TIIR)
- support of clinical departments
- expertise of staff
- expertise of nursing staff
- staff interest in involving family
- availability of clinical neurophysiology
- recreation program
- vocational program
- identification of Head Injury program as a special unit
- TIIR reputation (National and International)
- interdisciplinary communications
- association with Texas Head Injury Foundation
- close working relationship with TRC

WEAKNESSES/LIMITATIONS

- extent to which family actually involved
- patient follow-up
- inadequate number of outpatient therapists
- negative image of TIIR Head Injury program in the medical center
- cost of care (sum of individual services); possibility that some services are routinely provided without adequate indication
- inaccurate information sometimes provided to prospective patients families by staff in Admitting office
- inconsistent assignment of staff to care for Head Injured patients
- lack of neuropsychologist on the Head Injury Team
- inefficient practices in team rounds
- no information booklet for families at admission
- performance of transportation of personnel
- no accommodation of food service to patient's condition
- mixing of patients on Station 6; need integrity of Head Injury Unit
- mixed messages from administration by encouraging mixing of different diagnostic categories requiring very different types of care on station 6
- no signs on offices
- lack of carry-over from treatment to nursing care
- insufficient number of staff

- lack of outpatient alternative programs - vocational, day care, respite care
- inadequate attention to therapeutic milieu
- inadequate coordination of patient's program
- lack of neuropsychology treatment services
- no research being done
- lack of staff orientation materials
- lack of protocol for evaluation and treatment of patients
- lack of definition of roles and responsibilities of team members
- resistance of some staff members to change
- inadequate data base
- inadequate outcome measures
- inability to define patient goals

GOALS: (these statements were recorded as elicited from participants)

- regular team meeting (1/month) devoted to problem-solving and planning
- develop:
 - polices and procedures for head injury program
 - program for family education
 - definition of head injury "program" and strategy for building and maintaining integrity of team and treatment of individual patients
 - strategy for obtaining consistency of care
 - program of staff development and orientation of TIRR staff
- improve therapeutic recreation program for patients with head injury
- improve materials for "selling" program to potential users of services
- recruit neuropsychologist with responsibilities for therapy
- staff development to improve knowledge and skill in handling cognitive/behavioral problems
- improve structure of environment policies regarding when patient cleared for certain activities/privileges
- define roles and responsibilities of team members
- define character of head injury team (treatment protocol)
- plan for carry-over of treatment
- plan for research
- address amenities of patient care, including dietary (type of food, utensils, progression to eating in dining room)
- plan workshop to explain program to 3rd party payers
- develop outpatient (clinic) program with team followup
- develop satellite outpatient programs - day care, vocational, re-entry, respite
- explore alternative transportation for patients (e.g., shuttle from Marriott parking lot)
- improve efficiency of rounds
- develop alternative outpatient programs
- work on improving public relations of head injury program in medical center and Texas
- new brochure
- define unique orthotic needs of head injury patients
- improve communication with referring source
- admitting and discharge photo
- outcome evaluation

HIRET1

- get signs on doors of offices on 3rd floor
- review costs of head injury program
- establish data base
- develop plan for involving families
- establish Journal Club
- establish staff development

APPENDIX B

THE INSTITUTE FOR REHABILITATION AND RESEARCH HEAD INJURY REHABILITATION PROGRAM

December 18, 1984

MEMORANDUM

TO: MEMBERS OF TIRR HEAD INJURY TEAM
Robert Campos, MD
Diane Carter, Social Work
Donna Woodworth, Phys. Ther.
Mary Beth Friedman, Voc. Serv.
Les Tanner, Pharmacy

Kathleen Pace, Nursing
Theresa Gregorio, Occup. Ther.
Beverly Wright, Speech and Hearing
Amy Nelson, Therapeutic Recreation
Patty Lee, Occupational Therapy

FROM: Don Lehmkuhl
Coordinator, Head Injury Program

RE: Agenda for Regular Meeting, Monday, January 21, 1985, 4:00-5:30 pm
Group Therapy Room in Occupational Therapy Area, Third Floor, TIRR

1. Reports of Task Forces working on Head Injury Program Goals for 1985

- a. Categorize the types of patients admitted to the Brain Injury Unit. Prepare a list of "Standing Orders" within individual disciplines for each category of patient.
Task Force Members: Kathleen Pace, Lyn Emerich, Les Tanner
- b. Collect examples of family education booklets. Prepare a draft of a family education booklet for use in the TIRR Brain Injury Program.
Task Force Members: Diane Carter, Roxan Ballweber, Robert Campos
- c. Identify and describe needs of the TIRR Brain Injury Program which can enhance the safety and therapeutic effectiveness of the program. Suggest possible solutions to problems identified.
Task Force Members: Beverly Wright, Patty Lee, Amy Nelson
- d. Draft a list of functional goal statements appropriate for the types of patients admitted to the Brain Injury Unit.
Task Force Members: Theresa Gregorio, Donna Woodworth, Mary Beth Friedman

2. Status report on search for a neuropsychologist

3. Other business

4. Announcements

cc: Mary Alfred, Nursing
Frances Pendergraft, Social Work
Peggy Kanellos, Vocational Services
Paula Ballweber, Therapeutic Recreation

Lyn Emerich, Physical Therapy
Pam Lathem, Occupational Therapy
Billie Sills, Nursing

why can't treatments
be at HIRE
with pts +
families
residing
in
model?

PEDIATRIC REHABILITATION CONVENIENCE CENTERS

PROGRAM PLAN

Barry Bowser, M.D.
Director

Industrial
Injury Center
also
performs
out-pat - Med-
Center
sch

and
Head
Injury

March, 1985

Pediatric Rehabilitation Convenience Centers

I. Market Analysis

A. Potential Customers

This program will be targeted at the same diagnostic classes of patients as the pedi-inpatient program. The population will consist of those persons ages 13 and younger. This program, however, will serve as an alternative to hospitalization utilizing a motel per diem. Again, this program is intended to have a regional and state-wide draw. Potential customers (parents will find that a comprehensive service can be provided for two-thirds the cost of inpatient programs. Therefore, the program will provide a new cutting edge in service pricing and delivery.

B. Market Size and Trends

All indications are that there is a sizeable population presently going unserved. The market size should remain relatively constant for 5 to 10 years. As potential patients/clients experience developmental problems they become candidates for various elements of the program. Further, as patients are discharged from inpatient programs, this program becomes a less costly alternative.

C. Competition

Our competitors have not entered the market with this service approach. However, Texas Childrens and Plaza Del Oro Hospitals have the programs which attempt to provide the intended service array. However, their program locations (hospital based) tend to set them apart from this emphasis

	<u>Strengths</u>	<u>Weaknesses</u>
Texas Childrens	Name ID	Parking Hours Pricing Marketing Lack of coordination Hospital per diem Outpatients are second class citizens
Plaza Del Oro	Corporate Mentality Marketing	Parking Hours Pricing Lack of comprehensiveness Hospital Per Diem

TIRR	Program	Newness
Pedi-Convenience	Leadership	Unmarketed
Center	Name ID	
	Alternate hours	
	Motel Per Diem	
	Parking	
	Outpatient focus	
	with inpatient	
	coordination and	
	comprehensiveness	
	Transportation	

II. Distinctive Program/Service Product Characteristics

- A. The proposed program will offer an array of pediatric rehabilitation services, but on a motel per diem rather than a hospital per diem. The alternate pricing and costs savings will be attractive to third party payers, insurance companies and parents responsible for company insurance or deductibles. Pricing, parental involvement and comprehensiveness should result in significant petitive advantages.
- B. Barriers
- Facility licensure, Life Safety Codes, Occupancy Standards and other local, state factors must be explored.
- CON is not required
 - As the concept becomes popular, there is probably no way to limit competition.
- C. R & D Requirements - none.
- D. Regulatory requirements
- local, state occupancy and licensure issues
 - CON requirements have been waived.
- E. FIT - This program provides a logical extension to the Pedi-Inpatient program. Patients can serve as referral feeders from one program to the other based on acuity requirements. Therefore, the program is an extention of existing focus.

III. Marketing Strategy

- A. Target Markets - The program is intended to have a statewide focus. Therefore, market share is encumbent upon an excellent marketing effort utilizing several different mass media approaches as well as individualized program promotion.

Estimated Gross Revenues (Data)

N=20 patients Daily

<u>Revenue</u>	<u>Daily</u>
M.D. Visits (1)	x 20 = 20 x <u>25</u>
P.T. " (2) 1 pt. 1 day	x 20 = 40 x <u>72</u>
O. T. " (2) 1 pt. 1 day	x 20 = 40 x <u>60</u>
Speech TR (1) 1 pt. 1 day	x 20 = 20 x <u>50</u>
SW/	
Psych TR (1) 1 pt. 1 day	x 20 = 20 x <u>50</u>

<u>Expense</u>	<u>Monthly</u>
M.D. has own fees	M.D. 20 visits x 22 Days = 440 visits
P.T.	P.T. 40 visits x 22 Days = 880 TR
O.T.	O.T. 40 x 22 Days = 880 TR
Speech	Speech 20 x 22 Days = 440 TR
SW/Psych	SW/
Rental = \$4400 monthly	Psych 20 x 22 Days 440 TR

Revenue/Month Discount 50%

M.D.	\$ 11,000
P.T.	63,000
O.T.	63,000
Speech	22,000
SW/	22,000
Psych	
	\$ 201,000 month
	\$100,000 month

C. Pricing

The program has unlimited potential. Daily programs can be tailored from acute 4-5 hours daily to leisurely paced 2-3 hours daily. The cost in any event will reflect a motel per diem, and charges for "hands on" time only. It is expected that pricing will reflect a one-half to two-thirds reduction as compared to inpatient pricing for similar services.

D. Marketing Plan

A comprehensive marketing plan is being implemented through the efforts of Spicer and Company. Various approaches are under consideration.

These include:

1. T.V. Program announcements in major markets
2. Newspaper announcements (ads)
3. Special mailings to M.D. groups
4. Travelling speakers Bureau
5. Journal ads

E. Promotion (same as D above)

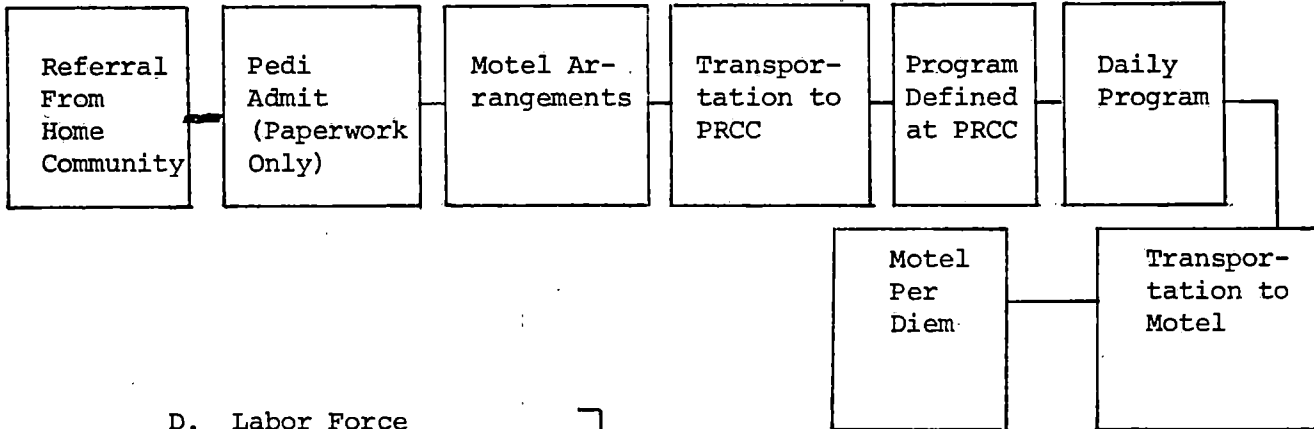
IV. Operations

A. Location - A location outside the Medical Center, but within the Medical Center area. This will be helpful for some ancillaries like laboratory and radiology.

B. Facilities and Equipment

8,000 feet of leased space @ \$.55/ft
Clinic furnishings \$10,000
P.T. Equipment 30,000
O.T. Equipment 15,000
Office furniture 8,000
Telephone 2,000
Computer access 3,000

C. Process



D. Labor Force

M.D. Leadership
PRCC Manager
P.T.
O.T.
Speech
Social Work
Psychology Consul
Nursing

Labor force should be available with reasonable recruiting efforts

V. Management and organization

A. The PRCC should be an extension of the Pediatric Inpatient Program. Staff In-service and recruitment efforts should inter-relate between the the two programs. A staff recruitment plan would result in the following time table

	<u>Month 1</u>	<u>Month 2</u>	<u>Month 3</u>	<u>Month 4</u>	<u>Month 5</u>	<u>Month 6</u>
P.T.	Recruitment	Training & Prog. Procedures	Operate		Evaluation	\$ Review & Staff Review
O.T.	"		"		"	"
S.W.	"		"		"	"
Speech	"		"		"	"
Nursing	"		"		"	"
PRCC Mgr.	"	Prog. Procedures	"		"	"
Marketing and Promotion	Promote Program	Promote Program	"		L"	Marketing Review

VI. Timing

	<u>Month</u>					
	1	2	3	4	5	6
Lease space	_____					
Purchase/lease Equipment	_____					
Construct Interior Space	_____					
Furnish Market	_____					
Recruitment	_____					
Operate-10 patients daily			_____			
Operate-20 patients daily				_____		
Evaluate				_____		

Depending upon time availability, D. Stock and B. Bowser, M.D. will implement all phases of the plan.

VII. Financial

Expenses must be established.

VIII. Start-up Funds

Projection will be developed and refined after P & L, cash flow and breakeven analysis are completed.

TIRR INDUSTRIAL INJURY CENTER

PROGRAM PLAN

March, 1985

**TIERR**

THE INSTITUTE FOR REHABILITATION AND RESEARCH

in the Texas Medical Center / 1333 Moursund Avenue / Houston, Texas 77030 / (713) 797-1440

M E M O

TO: The Marketing Group

Bob Baker	Frances Pendergraft
Joyce Salhoot	Maricella Sánchez
Connie Miller	Rick Keniston
David Stock	Bonnie Brooks

FROM: Peggy Kanellos *PK* and the Vocational Services Staff

DATE: August 13, 1984

SUBJECT: Return to Work at TIERR

Since we did not have an August 6 meeting, I am sending you our report and recommendations for making Return to Work a goal for TIERR patients. I look forward to receive your comments.

PK/sal

A voluntary, not-for-profit hospital for restorative medicine serving the disabled through care, research and education.

Services Offered: Early restorative medical care, comprehensive rehabilitation, surgical restoration, diagnostic evaluation and planning, independent living services, vocational evaluation, training, placement, sheltered employment.

RETURN TO WORK

Making It Happen at TIRR

Historically the rehabilitation movement in the United States has been virtually synonymous with vocational rehabilitation. The predominating criterion for judging "success" in rehabilitation involves entry or restoration of the handicapped individual to the world of work. Indeed, the goal of competitive employment is not simply one that the state-federal rehabilitation system imposes on its participants, but also one that is highly valued by disabled persons as well. Neff has observed that "we live in a strongly work-oriented society, in which the ability to perform remunerated employment is not only virtually a sine qua non of full citizenship, but has been internalized by most of us as the indispensable requirement for becoming an autonomous and independent adult."

The Philosophy of TIRR and Our Expectations

TIRR, recognizing the significance of work in the lives of our patients, states in its Mission Statement that the purpose of TIRR is to provide an array of multidisciplinary services that assist persons to live independently and "function productively within the community." Furthermore, the Board of Trustees "fosters, guides, and strengthens the quality and scope of services required to help disabled persons achieve optimum physiologic, psychologic, vocational, and social functioning."

A survey of most patient care staff at the Institute would probably affirm the value of work to ourselves and our patients, but it might also reveal a basic feeling that work will be ruled out for most patients for the rest of their lives because of severe functional deficits. And indeed the business of rehabilitation is conducted at TIRR as though work options for most patients no longer exist: vocational services are provided to a scattering of patients and withheld from others because of sponsorship considerations; the goal of higher education (easily understood by health care professionals) is widely espoused as a goal for all severely disabled patients, no matter their intellectual capabilities or educational or work backgrounds); many therapeutic activities seem to recreate recreational and leisure activities rather than those required in the work place; "prevocational activities" seem to be limited to written communication skills; some rehabilitation teams consider vocational goals to be of secondary importance in the rehabilitation effort and invite the participation of the vocational counselor after medical and functional goals are completed (and after

patients and family have made uninformed decisions about job feasibility); staff lacks information about the vocational impact of their services to patients and about the ultimate outcome of the rehabilitation effort at TIRR (How many patients go back to work? On what jobs are they employed?).

National spinal cord injury statistics indicate that, for persons who were students at the time of injury, 79% were either working or in school four years after injury. For persons who were employed at the time of injury, 42% were working or in school four years after injury. TIRR has no statistics on the employment/productivity outcomes of its former patients, but observation suggests that employment statistics for our amputees would be higher and for our head injured/stroke patients would be lower.

That these attitudes and practices exist seems to be a function of tradition, habit and lack of information. Education of staff, particularly of those who are in formal and informal leadership positions, is a key to changing attitudes, expectations and practices that impede our patients' return to work. The expectation that most patients will return to work should become part of the "collective subconscious" of the Institute. It should be communicated both overtly and through the behavior of all with whom the patient comes into contact that we expect to rehabilitate persons to return to work.

Staff may begin to develop these understandings through educational activities associated with staff orientation, intradepartmental and interdepartmental continuing education programs, modifications of and additions to therapeutic activities, regular inclusion of vocational goals into patient goals, addition of vocational planning to the first admission protocols, dissemination of information about long term outcomes and public and health service provider education.

Patients and their family members should also have the opportunity to directly hear about and observe TIRR's mission and their roles as beneficiaries of the mission as early as possible in the admission, if not prior to it. A videotape presentation could accomplish this well by delivering the message visually and aurally at the convenience of staff, patients and family members.

Physicians and case managers must also hold the belief that their patients can succeed vocationally after rehabilitation. As team leaders these individuals are highly influential in establishing patient expectations and goals, guiding programs, monitoring their fulfillment and providing reinforcements.

Our belief that return to work is expected from our patients must be communicated to sponsors and the community at large in its public relations materials. In the past we have demonstrated to the public what rehabilitation is: what therapists and patients do and how progress is achieved. In the future the message must be the results of rehabilitation in economic, personal and social terms (Promethean articles on successful former patients express this well; however, for most sponsors, success must also be defined in economic terms as well).

Finally, the Institute should continue its leadership in the public and governmental arenas to bring about the removal of barriers that impede return to work for our patients: financial disincentives, architectural barriers, transportation, inadequate housing, public attitudes, legal barriers, etc.

The Practice of Rehabilitation

TIRK prides itself on beginning discharge planning even before the patient comes through its doors. The expectation that patients will successfully complete rehabilitation goals so that they will be well prepared for the transition to their home helps to facilitate execution of the complex plans that must be integrated and coordinated by all involved. However, the benefit of rehabilitation is not limited to the skills learned by the time the person leaves the hospital or outpatient therapy. Just as we begin preparation for discharge at the beginning of rehabilitation by developing goals that reflect our attitudes and expectations, administration and staff at TIRK can similarly facilitate early planning for return to work, even though this goal extends beyond the temporal limits of the TIRK hospitalization. Viewing rehabilitation as extending beyond the hospital stay will benefit the patient in other areas of life beyond the vocational - independent living, physical health and function, and psychological adjustment, among other areas. Success for our patients should be redefined in productive terms, patient achievements monitored and then communicated to staff, patients and sponsors.

Additionally specific long and short term goals should be established as soon as possible in the admission preferably in the first two weeks. Sponsor goals and expectations if appropriate should be incorporated into these goals.

Although the medical commitment to our patients continues in a tangible way through our outpatient clinic services, it is unclear what type of commitment we have to patients in other areas after discharge. This, as well as our expectation of patients after discharge, should be clarified.

Service Delivery: Clinical Staff

TIRR has always had a reputation for serving well the most severely disabled of disabled persons, most notably high risk spinal cord injuries, severe and multiple amputations, traumatic head injuries and complicated polio cases. Our ability to respond to the rehabilitation needs of these persons has given us a reputation as highly skilled, technically competent facility. But because the community perceives us to be so highly specialized, they may be sending their "routine" rehabilitation cases elsewhere. These are persons who usually have more vocational potential because their functional limitations are less severe. Getting the word out that TIRR welcomes the traditional, less medically complicated patient will mean TIRR's serving a diverse population who can maximally benefit from the full range of our services - and will mean more positive vocational rehabilitation outcomes as well.

Just as the entire team of health care providers contributes to medical, functional and social goals, there are specific ways that they can contribute to vocational outcomes as well:

First, every team member, those who work with patients on a day to day basis, and those who help to establish the environment at TIRR must have a broadly defined expectation of work for every patient (competitive work, sheltered work, homemaking, volunteerism, study, training, etc).

Second, other disciplines may be able to introduce therapeutic activities into their programs that reinforce work expectations and have some face validity as work (e.g. electronics, woodworking, soldering, use of measuring instruments, food preparation, sewing, filing, bookkeeping or cosmetology projects in occupational therapy).

Third, we should educate staff about the priorities of return to work options (Same job, same employer; modified job, same employer, etc.) and deemphasize higher education as the vocational solution for all patients. The value of preserving the individual's job with the preinjury employer should be emphasized to staff so that they can reinforce this in their frequent contact with patients who bring concerns of many types to the therapists. While the vocational counselors concentrate on this in their patient contacts, our small staff sees patients about one hour per week while physical and occupational therapists may see patients up to ten hours per week. The impact of therapists on goals and attitudes of patients can be significant.

Fourth, when patients have a specific job waiting, it may be advantageous to reproduce the tasks necessary to perform the

job in the therapy setting. This would help the person solve functional problems and plan for efficient job performance.

Fifth, the tasks identified as "prevocational skills" in occupational therapy should be expanded or relabeled. If they keep the label, results should be quantified so that reports will be meaningful in vocational terms.

Sixth, professional patient care staff should participate in training that informs them about the needs and agendas of sponsors, particularly insurance companies and the state rehabilitation agency. I have always been impressed with therapists' willingness to assist sponsors once they understand how they can help.

Service Delivery: Vocational Staff

The Vocational Department must play a key role in making return to work a reality for TIRR patients. At present the department offers the following services:

Vocational Counseling (goal setting, vocational exploration, resource development, referral to resources, test interpretation, etc.)

Vocational Assessment

Vocational Evaluation and Testing

Expert Testimony

Case Management in the CLASS program

Modules (Financial Resources, Vocational Planning, Job Seeking Skills, Automotive Maintenance)

However, additional services would enhance patients' return to work efforts. One of the most powerful program components (and one that could be difficult to fund directly) impacts job placements - a job club and job referral service in which clients/patients participate in a regular supported program of job seeking. In this approach staff does not find work for clients, but rather teaches clients successful job seeking techniques and provides the resources, information and support needed to enable them to find their own jobs. We should also be able to offer employers, insurance companies, governmental agencies, among others work site analysis for job analysis, job modifications and injury prevention.

Other services to consider, depending on TIRK's direction and availability of resources, would include:

- Integration of a vocational activity (as opposed to counseling) into the head injury program to improve the quality of the vocational assessment and develop some work-related habits that may carry over after discharge.
- Work activities for clients without immediate potential for competitive work (could be part of a day activity or therapy program for head injured persons)
- Services for TIRK employees (vocational counseling, evaluation, testing, out placement)
- Offering our existing services to the general public
- Case Management for long term disability and worker's compensation cases
- Follow up counseling for outpatients

Installing more services at TIRK has implications beyond helping patients to become job ready. It also means allocation of important resources: money, space, patient time and personnel. Sources for funds for new programs are not readily apparent. However, the fee for service system can generate some, and organizations such as the state rehabilitation agency may possibly provide some support for new programs as well. Materials and equipment should be up-to-date and state of the art. Vocational evaluation tools, videotape equipment and materials, a computer and job match and guidance software should be among our vocational tools. An intradepartmental equipment pool for highly specialized needs and activities should be maintained and vendors should have the opportunity to demonstrate and exhibit the latest technology to staff, patients and the community.

Within the department there should also be a greater emphasis on employer contact, cooperation with rehabilitation engineering regarding work related needs (primarily outpatients) and developing work tryout sites within TIRK and the Medical Center.

The TRC Relationship

A successful relationship with the state rehabilitation agency is a key element in developing a return to work attitude at TIRK. There should be a mutual understanding of and respect for each others' function, procedures, policies and

reason for being. There must also be clarity about how services are carried out with the two agencies working shoulder to shoulder. At this time the role of the TRC counselor inside TIRR is unclear and TRC's role in providing the following services must be clarified:

1. financial sponsor
2. coordinator of services
3. provider of services to inpatients
 - a. assessment
 - b. counseling
 - c. placement
 - d. adjustment
 - e. education

Also critical in the continuation of a successful relationship is communication. There is still some difficulty managing an efficient flow of necessary medical records to the state agency. The counselor is also in need of current planning information on inpatients, but cannot attend team rounds on a regular basis; therefore TRC goals are not integrated into the TIRR program nor are TIRR goals integrated into TRC planning.

At this point, neither TIRR vocational counselors nor the TRC counselor provide counseling and planning services with TRC sponsored inpatients; therefore a number of persons leave the Institute with no or unrealistic vocational plans. Also, persons referred by TRC to TIRR's vocational evaluation have not been ready or poorly prepared because of inadequate assessment by the counselor. Until these deficiencies are resolved, the return to work goal will be more difficult to achieve for these persons.

RECOMMENDATIONS

- I. Education of TIRR administrators, physicians, staff
 - A. Demonstrate ways that TIRR patients have succeeded vocationally and point out the contribution of TIRR to that outcome (staff development programs, First Thursday, Disability and the Rehabilitation Process, interdepartmental staff development).
 - B. Communicate return to work attitude in orientation to new employees.
 - C. Inform staff about goals and agendas of insurance companies and priority of return to work options.

II. Vocational Department

A. Develop the following service packages:

1. Job Club
 2. Consultation for work site analysis, job modification and injury prevention
 3. Job tryout sites within TIRR and the Medical Center.
- B. Install a vocational activity program as part of the head injury program.
- C. Purchase up-to-date vocational evaluation tools (work samples, microcomputer with job match and vocational guidance systems).
- D. Offer a vocational clinic for TIRR employees and possibly the general public.
- E. With administration, consider the feasibility of an outpatient day activity program and case management services for injured workers.

III. Administration

- A. Establish the expectation on the part of key personnel within TIRR that return to work is a goal for TIRR patients.
- B. Establish a program evaluation system that will report significant patient outcomes and communicate these to staff and the community.
- C. With Texas Rehabilitation Commission, develop a document that clarifies the role of each organization in relation to the other and to our patients/clients.
- D. Consider the ramifications of introducing day activity programs for outpatients.
- E. Clarify our commitment to outpatients in all areas (medical, functional, psychosocial, vocational, recreational, etc).
- F. Consider offering case management services to insurers.

IV. Clinical Areas

- A. Key personnel in departments communicate expectation of patient return to work to their staff.

- B. Introduce therapeutic activities that reinforce work expectations and worker self concepts, consistent with our patient population and individual characteristics.
- C. Set goals for patients on admission that include productivity expectations and communicate those to patients, family and staff. These should also incorporate sponsor goals.
- D. Redefine "prevocational activities" in occupational therapy and enhance communication between OT and Vocational Departments.
- E. Add vocational counseling to first admission standing orders.
- F. Develop an intradepartmental patient equipment pool of one-of-a-kind items that have usefulness across disciplines and enhance patient function in many areas (recreation, ADL, work, communication, etc.). Access to this would be useful to rehabilitation engineering, occupational therapy, physical therapy, therapeutic recreation, physicians, outpatient clinic, social work, psychology, speech, and vocational services.

V. Public Relations

- A. Develop a new patient/new family A-V orientation that, among other things, suggests return to work expectations.
- B. In its communication to referrers, emphasize TIRR's ability to serve well and economically the less severely disabled as well as the most severely disabled patients.
- C. Disseminate articles, press releases and other material on the economic value of vocational rehabilitation and return to work.

8/6/84

TIRR INDUSTRIAL INJURY CENTER
AKA TIRR CENTER FOR INJURED WORKERS
AKA TIRR INJURED WORKER CENTER

I. Summary

II. Market Analysis

A. Potential customers. Return to work of an injured or disabled employee benefits the disabled worker, the employer and the insurance company. We may then see ourselves with three potential sources of customers. These are:

1. Insurance companies that provide worker's compensation, long-term disability and liability coverage. The most likely purchasers of this service would probably be the larger worker's compensation carriers and those that provide disability benefits to the larger, most industrial employers in the greater Houston area.

Many of these insurance companies are already familiar with the services that private rehabilitation case management providers have to offer and generally think of those services in terms of managing catastrophic disabilities from a medical point of view. The larger companies with much experience in worker compensation tend to purchase rehabilitation management services fairly early when catastrophic injury is involved. However, with less severe disability (back injury, cardiac conditions), they tend to delay utilization of rehabilitation services until they see that their exposure is increasing and problems start to develop with the case. By that time, however, patients, families, employers, co-workers, and others involved with the injured worker may have developed expectations and habits that make return to work more difficult as each day passes.

The bottom line for most insurance companies is to return the injured worker to a job as soon as possible following injury so that

benefits will no longer be needed. They expect services to be provided as expeditiously as possible, clear communication, notification of all planning and significant steps in the rehabilitation process, and prompt but brief reporting.

2. Houston area employers may also be potential customers for the injured worker center. Return to work benefits the employer by reducing insurance costs, returning an experienced productive worker to the job, and demonstrating to employees an interest in their long-term welfare. At this time, Tenneco and its subsidiary company has expressed an interest in the service. It is expected that there would be interest on the part of employers in the areas of oil and gas, health care, manufacturing, transportation, construction, communication, utilities, government, hotel and restaurant industry, agriculture, etc.

Employers have fewer expectations about the benefits of rehabilitation services and considerable amount of education will be necessary for them to understand how rehabilitation can benefit them directly. However, if we succeed in satisfying the needs of Tenneco and its subsidiary insurance company, Philadelphia American Life, their testimonial may be an important tool to get the word out to other like-minded corporations.

3. Injured workers and their attorneys may also be a potential customer, particularly if the attorney appreciates the long-term benefits that rehabilitation may provide to his or her client. Plaintiff's attorneys are notorious within the private rehabilitation movement for discounting the benefits of rehabilitation to themselves and their clientele. They may, however, find our service useful if they are in need of an objective, comprehensive assessment of the medical, psychological, functional, and vocational status of their clients. Some plaintiff's attorneys already know about the ways that TIRR can assist them, having worked with staff from the Houston Center for Amputee Services and TIRR's physicians. Making personal contact with these individuals and referrals by other attorneys may be one way to make an impact on this group.

4. There are two other groups that may benefit from this service: (a) Private rehabilitation providers such as IRA/ Intracorp, Crawford Rehabilitation Services, UAC, Lopez-Kramberg, Liaison, and other private rehabilitation case managers, nurses and providers and (b) Texas Rehabilitation Commission who may be interested in the medical assessment rather than the vocational portion of the center. The private rehabilitation providers seem to work best with physicians with whom they have developed an understanding about the vocational relevance and timeliness of reports. If reports are delayed or stated in terminology that is not useful to understanding the problem from the point of view of return to work, private rehabilitation providers will probably turn elsewhere for their medical assessment.

- B. The market size and trends. The size and potency of this market seems to depend on two factors: the strength and vitality of the Texas economy, particularly oil and gas, and the ability of the Texas Legislature to pass worker compensation reform legislation that would mandate vocational rehabilitation services for worker's compensation claimants. At this time, medical rehabilitation services are mandated and are currently provided by TIRR. However, if vocational services are required, insurance companies and private insurance providers might be disposed toward seeking medical services that have a definite return to work orientation. If the legislature does pass the legislation that allows worker compensation claimants to get their rehabilitation services from an organization of their own choosing, TIRR will have the opportunity to compete with other providers, as well as the state rehabilitation agency. If the legislation should require that TRC provide the services, TRC will negotiate with us about provision of their medical vocational assessments.
- C. Competition. At this time, our competitors in this market are primarily other rehabilitation hospitals and private rehabilitation providers, although there is no one organization that combines medical and vocational expertise. From a medical point of view, facilities such as Medical Center Del Oro, Dallas Rehabilitation Institute, and physicians that specialize in physical medicine can provide the medically oriented services. The vocational competition comes from groups such as Lopez-

Kramberg, World of Work, IRA/Intracorp, Crawford, UAC, and Texas Rehabilitation Commission.

The center, as perceived in this proposal, has the advantage of offering comprehensive services that are medical, therapeutic, psychosocial, and vocational presented through a well coordinated and efficiently delivered team approach directed by a case manager.

TIRR has the advantage of being a well known, highly respected rehabilitation institution, that deals with the most difficult problems. We do not, however, have a reputation as having services that are responsive to needs of less severely physically disabled, primarily those with back impairments, cardiac conditions, and soft tissue problems. TIRR also has a network of referrers who count on TIRR for a variety of medical rehabilitation services.

The competition, particularly the small rehabilitation case management firms, already have established, warm and sometimes intimate network ties with worker compensation insurance companies, the federal government's Office of Worker Compensation Programs (OWCP), and attorneys. These small companies have much flexibility and maneuverability in that as soon as they are called onto a case they may drive to or fly to the client within 48 hours of referral.

III. Distinctive Program/Service/Product Characteristics

A. Description of Program. [Attached]

This program will be attractive to customers because (1) the medical coordinator for the team is a physician, (2) the customer has a choice of the complete package of services or any of its components, (3) a case manager helps the client to receive efficient, individualized planned services that are reviewed completely with the referrer and coordinated with their needs and schedules, (4) TIRR has some easily accessible highly specialized services (rehabilitation engineering, vocational evaluation).

So the center can provide state of the art services that accommodate the current needs of insurance companies and industry, the center will also have an Advisory Committee made up of representatives from the insurance industry, industrial safety officers, the medical community, the legal community, labor, personnel managers, and perhaps regulatory

or public agencies to provide guidance about current needs, problems, constraints, etc.

B. Barriers to competitors entry into the market

Because there is no legislation in Texas requiring vocational rehabilitation for injured workers, worker compensation carriers feel little motivation to provide vocational rehabilitation services for their clients. Some do with the expectation that, if their most severely disabled claimant goes to work, their long term payout will be significantly decreased even though in the short term there will be additional costs for some vocational services. If vocational rehabilitation should become mandatory in Texas, it will mean an avalanche of new providers in the field.

C. Research and Development Requirements

Statistical evidence of the efficacy of TIRR's rehabilitation services would be most helpful in demonstrating the economic value of providing comprehensive rehabilitation services to persons with catastrophic disabilities. Once this information is available, it should be disseminated to dispell the negative market place impression of TIRR services.

D. Regulatory Requirements

At this time, there are no regulatory requirements other than the usual licensure requirements of physicians and the need for vocational staff to be licensed professional counselors, certified rehabilitation counselors or certified rehabilitation insurance specialists.

E. Fit with Present Programs

The services described are mostly compatible with services offered by TIRR at this time. There are certain medical components that are not currently part of our package, primarily pain management and cardiac rehabilitation. Baylor Pain Control and Biofeedback Clinic and the Cardiac Rehabilitation Center may be resources to fill these needs.

IV. Marketing Strategy

A. Target Market

The first emphasis in the development of the program should be to develop a package of services

that meets the needs of our first client, Tenneco and Philadelphia American Life. Dr. Robert Wood of Philadelphia American Life indicated that other companies who have insurance coverage through Philadelphia Life could provide an initial group of referrals that could be the basis of a growing industrial clientele.

B. Estimated Net Revenue Volume Based on Soft Data

Revenue would accrue to the Institute in several areas, most of which would relate to outpatient services. These would include: vocational services, physical therapy, occupational therapy, physicians, outpatient clinic, and occasional other services such as rehabilitation engineering, dietician, driving program, neurophysiology etc. Expected revenue in 1985 and 1986 would be _____.

C. Pricing

We have estimated that the assessment portion of the process will cost approximately \$1500 for our first client. In addition, some therapeutic and case management services after the assessment process may produce another \$1000 to \$1500 income for a total of \$3000.

D. Marketing Plan and Promotion

The publication of a brochure describing the services of the industrial injury clinic, the benefits to employers, insurance companies and injured workers, and the beneficial outcomes of rehabilitation should communicate the benefits of the program. In addition, an advisory council will be appointed to apprise the program of community needs and to get the word out to their colleagues.

A public service announcement and ads and articles in journals and publications used by insurance companies, benefits personnel, and safety officers can also reach potential customers. An exhibit at conferences attended by potential customers would also be an opportunity to meet them face to face, distribute brochures, and provide an audio-visual presentation of our capabilities. Speaking at continuing education programs or at business dinners of business and insurance interest groups will also help us to reach customers in a fairly direct manner.

V. Operations

A. Location

A site that is convenient to expressways, convenient parking, central, architecturally accessible, pleasant, clean and professional would be preferable to the Texas Medical Center site which is intimidating, inconvenient and expensive to visit. If there were sufficient room in the Annex if parking were more convenient and accessible, and if the vocational evaluation program were located in one fairly large open room, the Annex facility would be satisfactory. Another location with facilities for a case manager office, vocational evaluation room, OT/PT room, and conference room (approximately 3,000 square feet) would be adequate to lease. A location in the vicinity of the Texas Medical Center, Galleria, Southwest Houston, or Houston Heights would all be desirable locations.

B. Facilities and Equipment

1. Vocational Services

As the vocational evaluation program is currently constituted, additional equipment will be needed to make the program fully usable by a person with a back impairment, cardiac condition, and other problems frequently encountered by persons with worker compensation injuries. It is anticipated that some physical capacity work samples and a comprehensive vocational prescreening system such as the MESA (Microcomputer Evaluation Screening Assessment) will help round out the system. The cost for this additional equipment would be approximately \$7500. If this were to be combined with the evaluation system as it exists now, that would be the only significant expense. However, if the evaluation system were to be duplicated, a total expenditure of approximately \$20,000 on equipment could be anticipated.

2. Therapeutic Equipment

If a room for occupational and physical therapy were to be installed, appropriate equipment would be necessary which should be determined by the PT and OT departments. The occupational therapy department has indicated an interest in installing a Work Hardening Program which may require additional specialized

equipment that is not currently available in the current program.

Computer capability will also be needed for vocational assessment and word processing.

C. Flowchart (See attached)

Profile of a typical Client

The typical referral to this program will more than likely be a male between the ages of 30 and 50 who has worked at an occupation requiring physical strength and mobility, generally skilled or semi-skilled in a job in a manufacturing, processing, construction, transportation, or other industrial field. The individual will probably have sustained either back strain or an operated back and has been off from his job more than six months, more likely a year and a half. He will probably be receiving worker compensation benefits and may have pending litigation. Staff should be prepared to perform as expert witnesses in court.

D. Labor Force

1. Medical Director will probably be Dr. Carter.
2. Case Manager/Vocational Rehabilitation Counselor will be Emma Y. Vasquez at an annual salary of \$28,000. Depending on the needs and nature of clients referred, a case manager should be able to adequately handle approximately 20 clients at any one time. When she has reached a case load of 8 clients, it would at this time be advisable to consider her as a half-time case manager and half-time vocational counselor. When this happens, a part-time vocational counselor for the TIRR Annex, Emma's regular assignment, should be considered. Supervising a caseload of 18 to 20 clients should be considered full time.

If Emma is not available for the program then the job could be best performed by someone who has experience of private rehabilitation case management, vocational rehabilitation counseling with a heavy emphasis on job placement and employer contact and someone who speaks Spanish fluently. If this person is not already well versed in insurance rehabilitation, training in the specialized needs and techniques of worker's compensation rehabilitation should be provided immediately. The counselor

should also have the opportunity to learn how to prepare for expert testimony as a vocational specialist by late spring of 1985. Referrals may be consistent enough to hire another vocational counselor to fill in for Emma's normal duties.

3. Vocational Evaluator

Depending on the location of the evaluation unit and its continued use by other portions of the hospital, it may be necessary to hire a half-time evaluator if we continue to use vocational evaluation in conjunction with the Annex. Because vocational evaluation is not heavily enough utilized at this time, running two separate programs does not make much sense. Locating the program in the Annex would be ideal, if the evaluation facilities were better.

4. Physical Therapy and Occupational Therapy

The Director of the TIRR PT/OT Departments have indicated a desire to provide outpatient therapies for clients of the Industrial Injury Center and should there be a significant amount of need for their services, they will each designate a therapist to work with the program. At this time, services will be coordinated through the Outpatient Therapy Coordinators.

VI. Management and Organization

A. Organization

The Industrial Injury Center will be located within the Vocational Services Department with the medical supervision provided by Dr. Carter. The case manager/vocational rehabilitation counselor will provide the vocational expertise that must exist if it is to succeed and meet the needs of employers and insurers. The team must be able to assess the individual's medical, functional and vocational situation quickly so that they can make recommendations to the referror about the efficacy of providing additional services. While TIRR has considerable experience working with the insurance community, it has less experience with employers and an effort should be made through training and the Advisory Committee to become better informed about the needs of employers and educated as to how to communicate with them.

B. Key Staff

1. Medical Director, Dr. R. Edward Carter
2. Case Manager/Vocational Rehabilitation Counselor, Emma Vasquez who has experience as a case manager, has worked with employers and governmental agencies, is knowledgeable about catastrophic disability, is Spanish speaking, and is an excellent counselor. Weaknesses would be in the area of lack of experience providing expert testimony and need for a higher level of expertise about pain and back syndrome.
3. Vocational Evaluator, Wayne Alfred who provides very objective, timely, technically accurate, well integrated and synthesized vocational evaluation. He has had experience as a Vocational Specialist for the Social Security Administration and is therefore comfortable providing expert testimony.
4. Director of Vocational Services, Peggy Kanellos has experience with catastrophic injury, insurance rehabilitation and other types of rehabilitation programs.
5. Shelia Lewis, Secretary. Secretarial support can be provided at least in the initial stage by current staff. However, should the program grow to require one full-time Case Manager/Rehabilitation Counselor, it is likely that additional clerical support will be needed.
6. Marketing Representative -

VII. Timing [See Gant Chart]

VIII. Financial

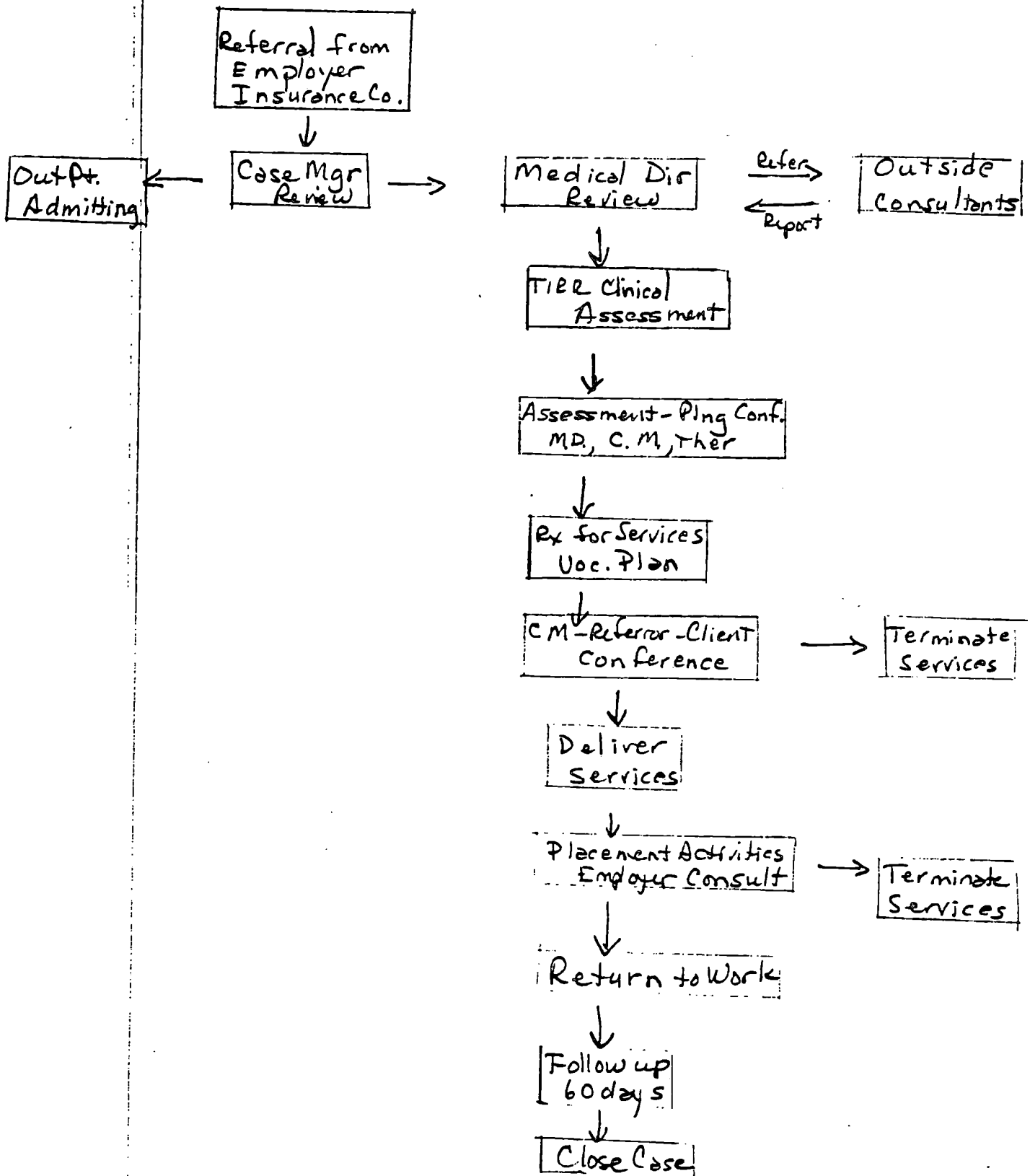
IX. Start Up Funds

Over the next three years, is estimated that \$_____ will be necessary to bring this program to a level at which we can work with 30 clients concurrently.

TASKRESPONSIBILITY

1. Establish TIRR commitment to IW Center	Administrator
2. TIRR meet with Phila. American Life about first patient	VP Development/Dir. Voc.
3. Procure commitment from TIRR Departments, personnel	VP Development/Dir. Voc.
4. Develop financial plan	A.A. Finance/Dir. Voc.
5. Establish liaison with outside consultants	VP Development/Med. Dir.
6. Procure commitments from Advisory Committee	VP Development/President
7. Convene Advisory Committee	Dir. Voc/VP Development
8. Develop forms and procedures	Dir. Voc.
9. Train case manager/voc. counselor	Dir. Voc.
10. Develop marketing packet	VP Development
11. Begin marketing activities	VP Development
12. Develop work hardening program	OT
13. Begin Job Club	Voc. Counselor
14. Begin TIRR job stations	Dir. Voc.
15. Develop case load 10 cases	VP Development/Dir. Voc.
16. Seek new office space	A.A. Support
17. Purchase evaluation/therapy equipment	Department Directors
18. Furnish office	A.A. Support/Dept. Directors
19. Develop caseload to 20+ cases	VP Development/Dir. Voc.
20. Hire Voc. Counselor	Dir. Voc.

Industrial Injury Center





25 Years of Excellence

M E M O

TO: David Stock, Planning and Development
FROM: Peggy Kanellos, ^{PK}Director of Vocational Services
DATE: January 4, 1985
SUBJECT: Industrial Injury Center

Attached please find the additional information that you requested to complete the TIRR Industrial Injury Center proposal - income projections and timeline. Please call me at 5021 if you need anything else.

Attachment

PK/sal

INCOME PROJECTIONS FOR 1985

BASED ON 21 CASES

Services	<u>Unit Cost</u>	<u>Number Units</u>	<u>Total</u>
TIRR Physicians			
Medical Director Consult	\$100	21	\$2,100
Initial clinic visit	150	5	750
Clinic visit	45	3	135
		Total	\$2,985
Physical Therapy	72	100	7,200
Occupational Therapy	72	12	864
Vocational Services			
Vocational Counseling	53	315	16,695
Vocational Evaluation	21	300	6,300
Other TIRR Departments (Rehab Engineering, Social Work, Outpatient clinic, etc.)	55	10	550
		TOTAL	\$31,609
Other physicians or Non-TIRR Services		10	

TASKRESPONSIBILITY

- | <u>TASK</u> | <u>RESPONSIBILITY</u> |
|---|------------------------------|
| 1. Establish TIRR commitment to IW Center_____ | Administrator |
| 2. TIRR meet with Phila. American Life about first patient_____ | VP Development/Dir. Voc. |
| 3. Procure commitment from TIRR Departments, personnel_____ | VP Development/Dir. Voc. |
| 4. Develop financial plan_____ | A.A. Finance/Dir. Voc. |
| 5. Establish liaison with outside consultants_____ | VP Development/Med. Dir. |
| 6. Procure commitments from Advisory Committee_____ | VP Development/President |
| 7. Convene Advisory Committee_____ | Dir. Voc/VP Development |
| 8. Develop forms and procedures_____ | Dir. Voc. |
| 9. Train case manager/voc. counselor_____ | Dir. Voc. |
| 10. Develop marketing packet_____ | VP Development |
| 11. Begin marketing activities_____ | VP Development |
| 12. Develop work hardening program_____ | OT |
| 13. Begin Job Club_____ | Voc. Counselor |
| 14. Begin TIRR job stations_____ | Dir. Voc. |
| 15. Develop case load 10 cases_____ | VP Development/Dir. Voc. |
| 16. Seek new office space_____ | A.A. Support |
| 17. Purchase evaluation/therapy equipment_____ | Department Directors |
| 18. Furnish office_____ | A.A. Support/Dept. Directors |
| 19. Develop caseload to 20+ cases_____ | VP Development/Dir. Voc. |
| 20. Hire Voc. Counselor_____ | Dir. Voc. |

SPINAL CORD INJURY CENTER

PROGRAM PLAN

Inpatient Services

R. Edward Carter, M.D.
William H. Donovan, M.D.
Co-Directors

Prepared by

Robert L. Baker
Administrator
The Institute for Rehabilitation and Research
Houston, Texas

March, 1985

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research

? re concrete
marketing steps

SCI RTC

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(National Effort)

are RECⁿ Increase
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X (p33)

longitudinal

p34 program
analysis

no mention
of neurophysiol.

EXECUTIVE SUMMARY

Our Spinal Cord Injury program is a mature inpatient program that is feeling the effects of 1) decreased incidence of trauma that causes SCI, 2) acute hospital responses to declining occupancies, 3) acute hospital reimbursement maximization strategies (escape from DRG-reimbursed acute care into cost-reimbursed rehab care), and 4) an increasing number of unfinanced and unfinanceable referrals.

To deal with these changes, which are significant, we plan 1) a greatly increased, but focused, marketing strategy intended to preserve or increase private-pay patient volume and to increase our share of the new (comprehensive rehabilitation) cases, 2) major emphasis on serving the ongoing needs of "ex-inpatients" by implementing a price-competitive physician's office practice model, other than the previous "clinic" model, 3) to present TIRR as the hospital to handle other general acute problems of the severely physically disabled, 4) to increase our attention to the rehab end of the care spectrum (e.g., vocational), 5) to develop data that demonstrate that our program produces long-term financial benefit, and 6) to act to improve the financing of care for severe physical disability.

No significant capital costs are required to achieve these objectives. Increased operating expense (for marketing, program planning and evaluation, and dealing with the unfinanced need issues) will be offset by operating cost reductions obtained through productivity improvements.

*must
relevant
to SCI*

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Appendix A

Appendix B

PROGRAM PLAN: SPINAL CORD INJURY CENTER

Inpatient Services

1. Program Description.

Our Spinal Cord Injury program returns people who have suffered injury to the spinal cord (generally from trauma) to as near their pre-injury status as is possible for them.

for INCH presentation
The economic results of this improvement in quality of life and increased personal autonomy are deinstitutionalization, return to work, or movement to lower cost levels of care or maintenance, and decreased intercurrent problems and re-use of hospital facilities, all of which produce savings over the long term for those who must pay for that care (eventually the costs are passed through to society as a whole).

We provide a comprehensive array of services ranging from post-emergency acute medical services in a hospital, through physical restoration, compensating devices, environmental modifications, psychosocial adaptation, return to work, and intense patient and family education on management of all potential health problems.

Our markets for this program are rather diverse. We tend to serve the upper Gulf Coast of Texas and Louisiana, and draw especially complex cases from national and international markets. Patients, providers, insurance companies, state agencies, case coordinators and employers in various combination select rehabilitation services. We deal with all of these groups who affect the choice of facilities and rehabilitation programs.

Our distinctive competences in this area are that:

- 1) We have 20 years experience in dealing with this problem and have seen over 2000 cases of all levels of injury,
- 2) We have a comprehensive array of high quality services available as the patient needs them,
- 3) The many specialties and services needed for the rehabilitation program are coordinated daily by senior medical staff with decades of experience and a history of excellent results,
- 4) Our medical staff who direct the program are current with innovations in the field, and must meet the standards for appointment to the faculty of a medical school,
- 5) Our long term, ongoing research and development program continues to improve our care process, both clinically and economically, and
- 6) We are one of only three facilities in the nation able to rehabilitate effectively the ventilator-dependent quadriplegic.

2. Market Analysis.

A. Potential Customers.

1. Who are they? The spinal cord injury program at TIRR serves people who become complete or incomplete quadriplegics or paraplegics as a result, usually, of trauma. These people tend to be young adult males who suffered the trauma as a result of automobile and other vehicular accidents, industrial falls or falling objects, gunshot wounds, and sports injuries of various kinds.

Table 1 shows the distribution of causes of SCI by broad level of injury (quadriplegic or paraplegic) and sex. Graphic portrayals of some of these distributions are shown in Figures 1 through 5. Abbreviated titles on the graph legends correspond to the cause names in Table 1 (q.v.).

The Institute for Rehabilitation & Research

Causes of Spinal Cord Injury

Quadriplegics

	Male	Percent	Female	Percent	Total	Percent
Auto Accidents	333	75.9%	106	24.1%	439	57.7%
Other Vehicle	73	94.8%	4	5.2%	77	42.8%
Industrial Falls	100	100.0%	0	0.0%	100	31.0%
Nonind Falls	76	86.4%	12	13.6%	88	46.6%
Gun/Stab Wounds	69	82.1%	15	17.9%	84	27.5%
Diving	230	93.5%	16	6.5%	246	96.9%
Football	44	100.0%	0	0.0%	44	100.0%
Sports	54	85.7%	9	14.3%	63	80.8%
Other Accidents	16	84.2%	3	15.8%	19	34.5%
Total	995	85.8%	165	14.2%	1160	53.0%

Paraplegics

	Male	Percent	Female	Percent	Total	Percent
Auto Accidents	216	67.1%	106	32.9%	322	42.3%
Other Vehicle	96	93.2%	7	6.8%	103	57.2%
Industrial Falls	222	99.6%	1	0.4%	223	69.0%
Nonind Falls	83	82.2%	18	17.8%	101	53.4%
Gun/Stab Wounds	180	81.4%	41	18.6%	221	72.5%
Diving	6	75.0%	2	25.0%	8	3.1%
Football	0	0.0%	0	0.0%	0	0.0%
Sports	11	73.3%	4	26.7%	15	19.2%
Other Accidents	27	75.0%	9	25.0%	36	65.5%
Total	841	81.7%	188	18.3%	1029	47.0%

All Patients

	Males	Percent	Females	Percent	Total	Percent
Auto Accidents	549	72%	212	28%	761	35%
Other Vehicle	169	94%	11	6%	180	8%
Industrial Falls	322	100%	1	0%	323	15%
Nonind Falls	159	84%	30	16%	189	9%
Gun/Stab Wounds	249	82%	56	18%	305	14%
Diving	236	93%	18	7%	254	12%
Football	44	100%	0	0%	44	2%
Sports	65	83%	13	17%	78	4%
Other Accidents	43	78%	12	22%	55	3%
Total	1836	84%	353	16%	2189	100.0%

Table 1

All SCI 1959-1983

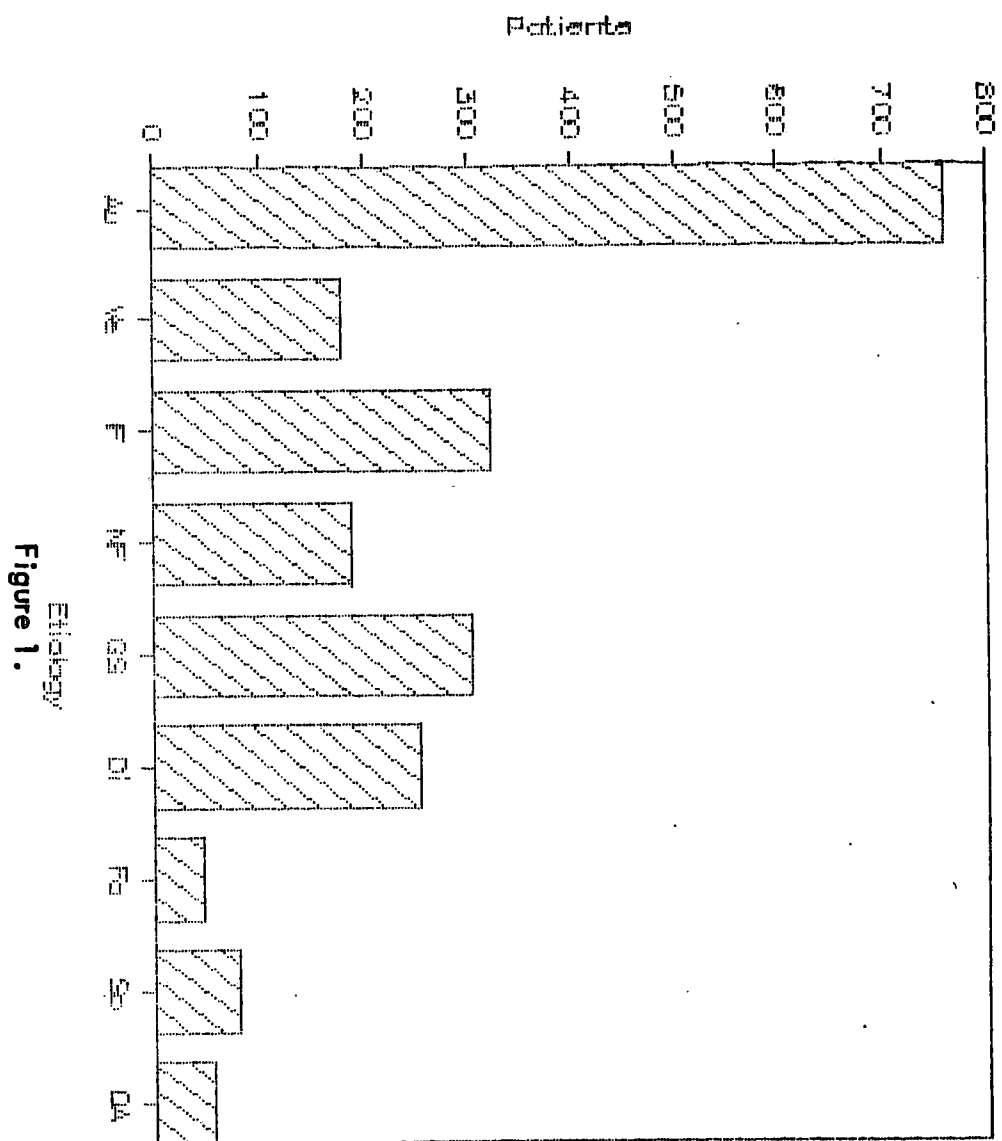


Figure 1.

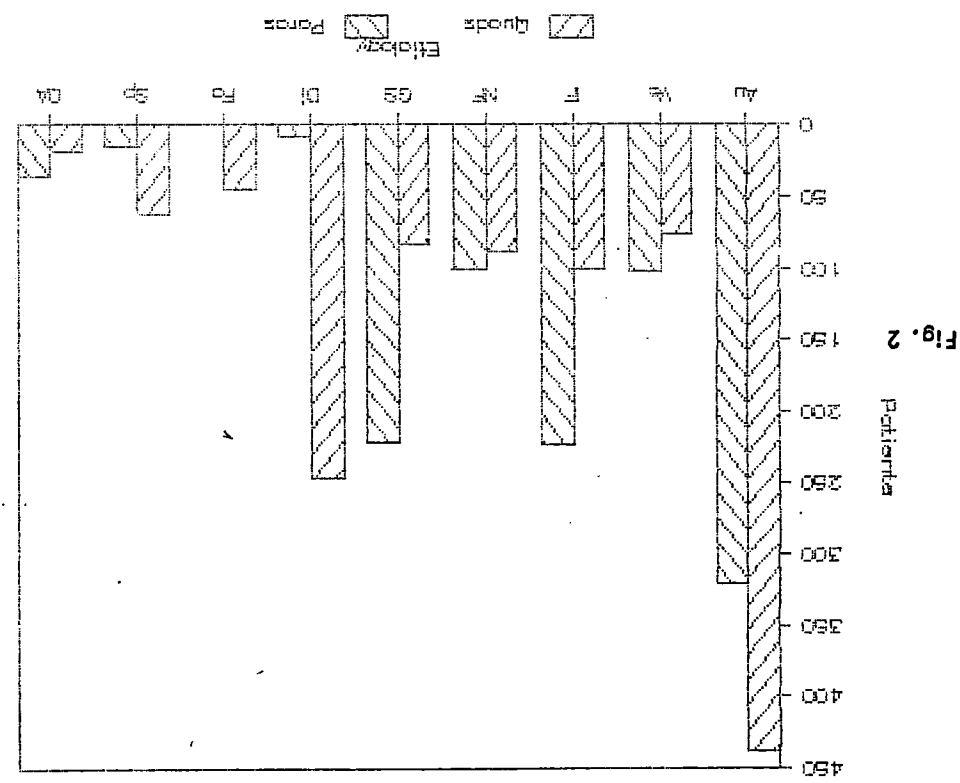


Fig. 2

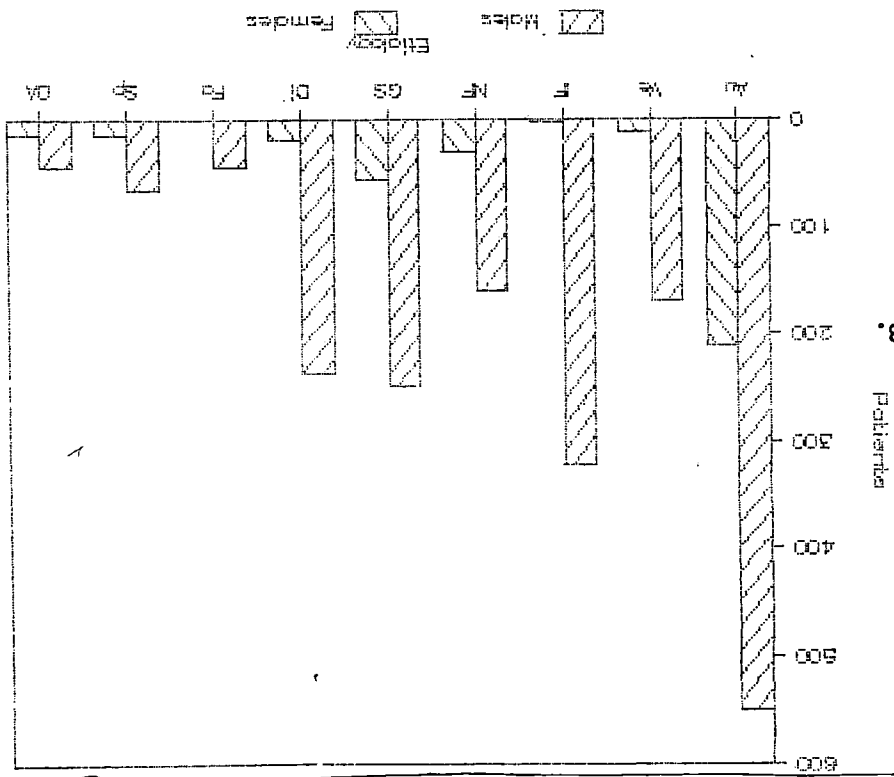
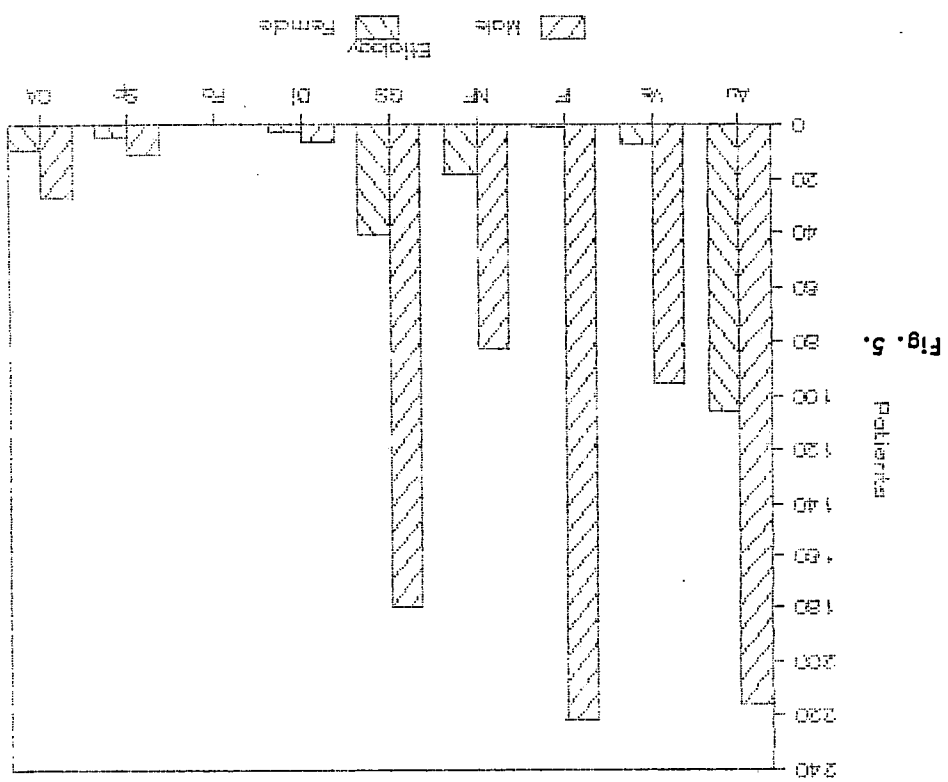
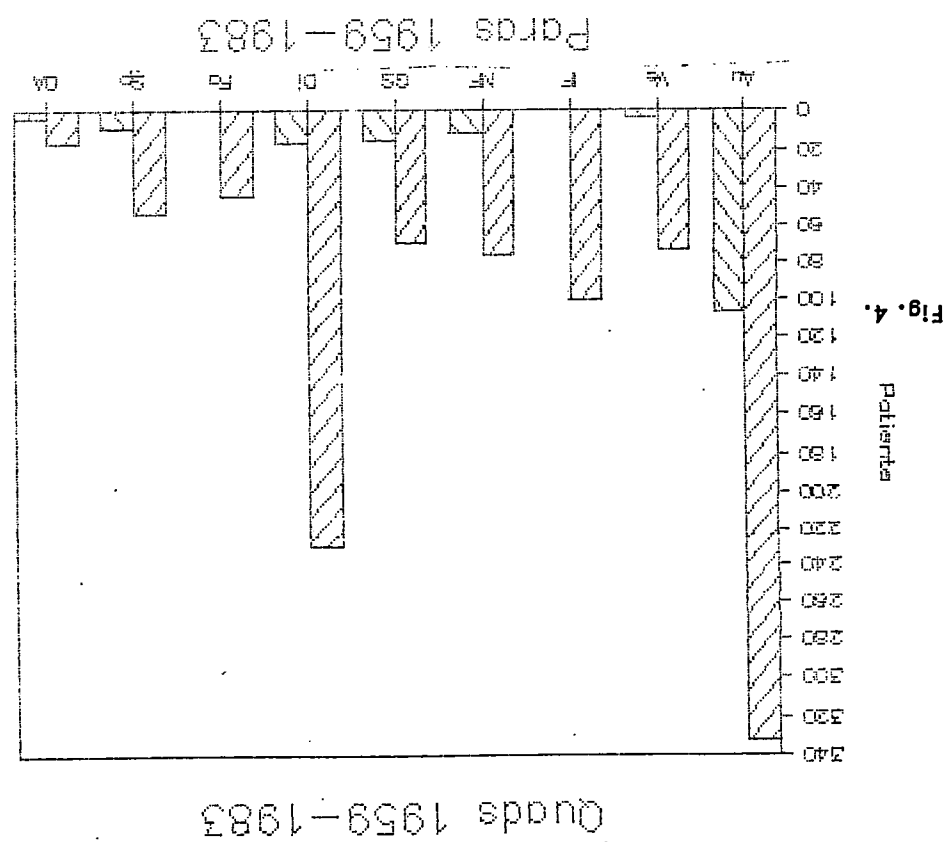


Fig. 3.



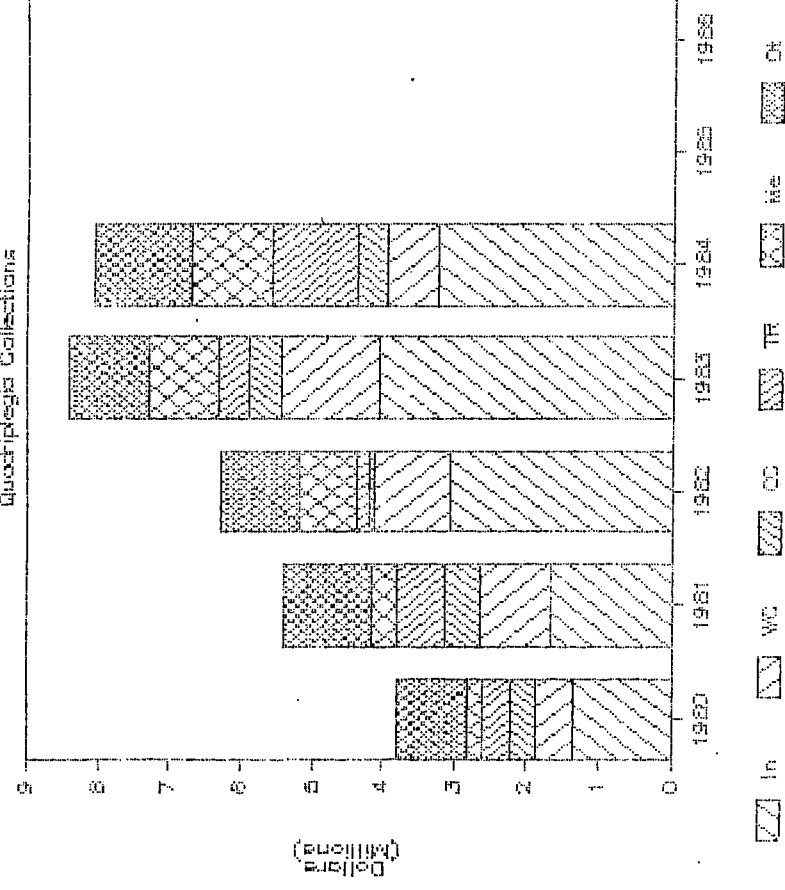
When a person sustains a spinal cord injury, he may be referred to TIRR through a variety of channels which serve as intermediate "customers". The person with a spinal cord injury is ordinarily treated first at a trauma center somewhere near the location where the injury occurred. Once he is past the emergency stage and his medical condition has been stabilized, appropriate resources are sought for his further treatment and rehabilitation. The people who get involved in selecting the resource are the intermediate "customers" referred to above. These include the treating physicians, nursing and social workers at the trauma center that receive the patient, and the patient's personal physician. The insurance coordinator for the third party insurance companies, the rehab nurse for the workers' compensation carriers, and private groups of these persons who contract with insurance companies to provide a case coordination service also affect the choice of the facility that will be recommended for the patient's rehabilitative care. At some time, patients who are candidates for state agency support will be referred to us by state agency counselors. The payor's (or their case management firm's) experience with various providers affects their referrals.

Since the employer stands behind the insurance company in many cases, either through his role in payment of workers' compensation claims or payment of medical benefits for their employees or dependents, an employer may also from time to time become involved in the decision to select the provider or to reject one. The position of the Institute's spinal cord program in the minds of these three classes of decision makers is important in determining whether or not a referral to TIRR takes place. Patients and their families, their attending or personal physician, and to some extent the payor for the care are all involved in selecting the facility that can produce the kind of results that they are looking for at a reasonable price. They are becoming more prudent buyers in making that choice.

Changes, over the years, in who pays for care, are shown in the graphs of Figure 6 and 7 for quads and paras and SCI as a whole. Note the increasing trend to more private insurance up to 1983, when it reached half the total volume. Medicare, too, has been growing in volume. The volume of "Other" has been constant or declining representing no expansion in Blue Cross, Medicaid, and self pay categories. Note also that, in 1982, collections were small for TRC and CCS as those state agencies offset payments against credit balances due them from TIRR. The figures do not reflect their volume of business with TIRR in that year.

Things changed in 1984 after introduction of the Medicare Prospective Payment System (PPS), which signaled a major national shift in payor attitudes. Our private insurance sources dropped by 25%, coming mostly out of the paraplegia population. Workers Compensation sources dropped 25% also, coming mostly from decreasing quadriplegia payments. The Workers Compensation collections increased for paraplegics. Those decreases were offset in part by an increase of 255% in TRC payments and a 30% increase in Medicare volume. In the "Other" category, increases in Champus and Medicaid volume offset the losses in Blue Cross. Our SCI program began to shift in 1984 from private payors to Federal and state payors, reflecting perhaps the reluctance of the acute general hospitals and their medical staffs to refer patients outside for rehab. In all, SCI collections dropped in 1984 after an annual growth each of the prior years shown.

SCI Program Quadruplegia Collections



SCI Program Paraplegia Collections

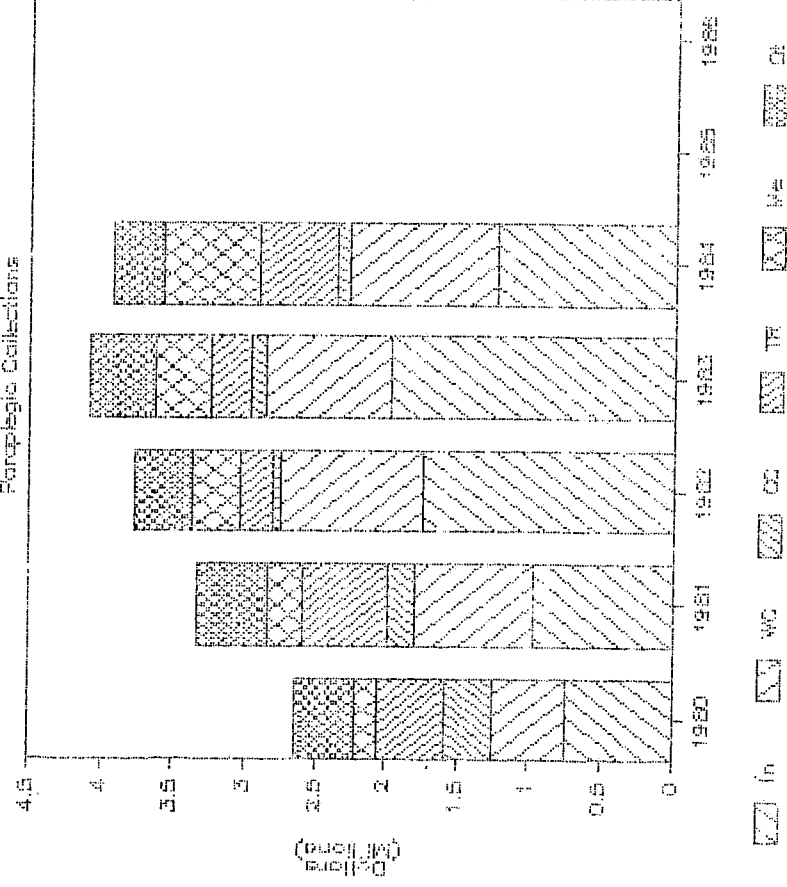


Figure 6.

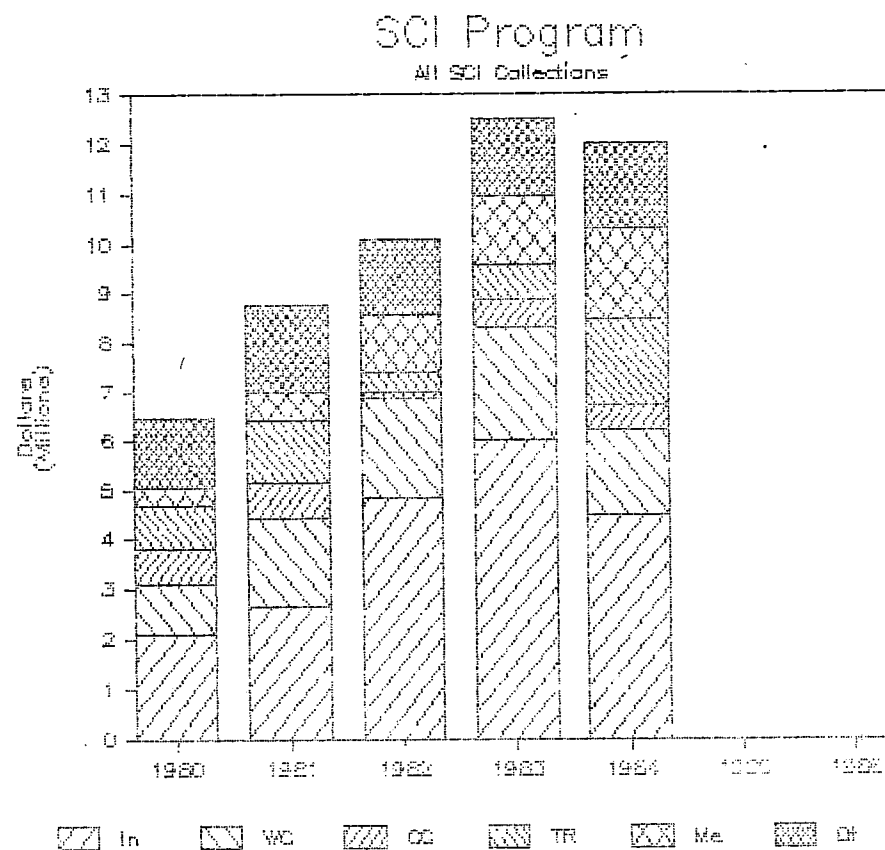


Figure 7.

2. Where are they? Patients for the spinal cord program appear to come from two markets. First, there tends to be an international, national and a Texas-wide market for the quadriplegic patient, particularly the complex quadriplegic and the high-risk quadriplegic with ventilator dependence. In 1983, some 13% of the revenues for paras and quads came from out of state. This figure represents an average 16% of the quadriplegia revenue was out of state while only 7% of the paraplegia revenue came from out of state. In Texas, itself quite a large state, 29% of the quadriplegia revenue came from outside of the Houston-Galveston SMSA. About 25% of the paraplegia volume came from outside. We tend to have quite a local market for the more straightforward paraplegia cases and to attract the complex quadriplegia case from a much wider service area. Within Texas, the cases occur in counties in or surrounding a major metropolitan area.

Table 2 shows inpatient revenue for FY 1983 distributed by patient group, state, and country. Note the volume of non-Texas quadriplegia revenue and the dearth of out-of-state revenues from other patient groups. Table 3 displays Texas revenues only, by patient groups and (approximate) SMSA in Texas. The same conditions hold. Table 4 shows the county-by-county breakdown of the condensed SMSA report of Table 3.

New patients. First admissions of paras and quads in 1983 contributed \$9 million of the \$14 million attributable to the spinal cord program. This represented 187 first admission patients and an average revenue per stay of \$48,000. These new patients generally were new injuries. Many of whom were picked up through the relationship we have locally with trauma centers and from multi-state and international referrals of complex quadriplegia cases.

Old patients. Once seen at the Institute, the patients are often returned to the referring physician but some become "TIRR" patients and join the clinical practice of one of the TIRR attending physicians. These patients are ordinarily followed up at intervals depending on their treatment protocol. In 1983, follow-ups and readmissions of old patients contributed \$5,000,000 of the \$14,000,000 attributable to the spinal cord program. Each case produced an average of \$16,000 in revenue. TIRR is assigning its 40,000th patient number and has, by this time, developed a historical base of "old patients" that it can follow.

3. Why do they buy? The cases are ordinarily transferred to TIRR when services they require are out of the scope of services available in the hospital currently caring for the case. This is one of the reasons why we tend to get the complex quadriplegic or other more involved paraplegics. The simpler cases tend to be treated with available facilities closer to home. It begins to make sense to travel to TIRR when the scope of services offered here are the best or only ones available that can benefit the patient.

Old patients will re-use the facility whenever they have intercurrent problems that are untreatable in their home town or when they become ready for the next stage in the rehab process.

4. What do they expect of price, quality and service? Spinal cord injury care, especially for the initial admission, is expensive. The

1983 Inpatient Revenue Distribution

	TOTAL	UNKNOWN	SCOL	RESP	ARTH	CP	PARA	QUAD	HEMI	HEMI	CVA	PRAL	PL10	PHS	CNS	HD	AMPU	AMPL	AMP4	BRTH	BURN	OTHR	??
BLANK	94,797	6,478	0	0	0	0	58,371	24,029	0	0	0	0	5,919	0	0	0	0	0	0	0	0	0	0
ALABAMA	1,745	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,745	0	0	0	0	0	0
ARKANSAS	13,588	0	0	0	0	0	0	1,279	0	0	0	12,309	0	0	0	0	0	0	0	0	0	0	0
COLORADO	1,976	0	0	0	0	0	1,976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FLORIDA	84,949	0	0	0	0	0	0	84,949	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KENTUCKY	13,610	0	0	0	0	0	0	13,610	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOUISIANA	871,703	0	0	0	0	0	158,985	552,650	49,800	0	0	0	1,847	0	0	0	3,128	0	26,506	0	7,773	66,676	4,338
MARYLAND	78,330	0	0	0	0	0	0	78,330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MICHIGAN	214,727	0	0	0	0	0	0	214,727	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MISSISSIPPI	91,188	0	0	0	0	0	0	91,188	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MISSOURI	143,021	0	0	0	0	0	0	97,974	18,493	0	0	0	0	0	0	0	0	26,554	0	0	0	39,137	0
NEBRASKA	39,137	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NEW MEXICO	44,688	0	0	0	0	0	0	14,984	0	0	0	0	0	29,704	0	0	0	0	0	0	0	0	0
NEW YORK	8,899	0	0	0	0	0	0	8,899	0	0	0	0	0	0	0	0	0	0	0	0	0	77,230	0
OKLAHOMA	169,019	0	0	0	0	0	16,541	75,248	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH CAROLINA	2,790	0	0	0	0	0	2,790	0	0	0	0	0	0	0	0	0	0	0	0	0	13,783	0	0
TENNESSEE	106,453	0	0	0	0	0	0	92,670	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TEXAS	14,789,711	116,447	93,043	2,190	30,153	11,170	4,401,660	7,846,829	267,042	139,727	46,619	187,563	42,968	7,890	17,095	33,081	43,060	402,357	97,605	332,099	60,338	595,515	14,460
ALASKA	9,401	0	0	0	0	0	6,498	0	0	0	0	0	0	0	0	0	0	2,903	0	0	0	0	0
SAUDI ARABIA	39,703	0	0	0	0	0	0	27,733	11,970	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEXICO	120,369	0	0	1,588	0	0	62,724	29,917	0	0	0	0	0	0	0	0	0	26,140	0	0	0	0	0
GREECE	11,260	0	0	0	0	0	11,260	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAN SALVADOR	67,605	0	0	0	0	0	0	67,605	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL REVENUE	17,018,669	122,925	93,043	3,778	30,153	11,170	4,720,805	9,322,621	348,105	139,727	46,619	199,872	50,734	37,594	17,095	33,081	47,933	457,954	124,111	332,099	81,894	778,558	18,798
	17,148,343																						

Table 2.

1983 Inpatient Revenue Distribution: Texas Counties

	TOTAL	UNKNOWN	SCOL	RESP	ARTH	CP	PARA	QUAD	HEMI	HEMI	CVA	PRAL	PLIO	PNS	CNS	MD	AMPU	ANPL	AMP4	BRTH	BURN	OTHR	??
Houston/Galveston	10,788,548	48,886	93,043	2,190	30,153	11,170	3,250,146	5,443,277	230,516	56,128	7,471	162,230	25,043	7,890	17,095	33,081	43,060	377,471	72,438	229,992	46,391	586,417	14,460
Baytown/Pt Arthur	1,007,154	1,178	0	0	0	0	341,702	561,681	0	24,476	39,148	0	0	0	0	0	0	0	15,494	14,377	0	9,098	0
Macogdoches	316,526	4,155	0	0	0	0	95,513	196,367	0	0	0	0	0	0	0	0	0	13,092	0	7,399	0	0	0
Tyler	160,068	160,068	0	0	0	0	26,022	128,354	102,332	18,838	18,838	0	0	0	0	0	0	0	0	12,876	12,876	0	0
Dallas/Ft Worth	314,205	40,633	0	0	0	0	68,518	184,139	0	0	0	0	7,068	0	0	0	0	4,174	9,673	0	0	0	0
Austin/San Antonio	783,108	0	0	0	0	0	217,914	506,980	37,326	0	0	0	0	0	0	0	0	7,620	0	13,268	0	0	0
Victoria	56,734	0	0	0	0	0	27,801	28,933	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Corpus Christi	197,656	0	0	0	0	0	91,711	105,945	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brownsville/Del Rio	82,649	0	0	0	0	0	26,332	30,984	0	0	0	25,333	0	0	0	0	0	0	0	0	0	0	0
El Paso	82,634	0	0	0	0	0	82,634	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Midland/Odessa	289,125	9,066	0	0	0	0	103,575	171,151	0	0	0	0	0	0	0	0	0	0	0	0	5,333	0	0
Abilene	185,471	12,529	0	0	0	0	0	167,532	0	0	0	0	5,410	0	0	0	0	0	0	0	0	0	0
Lubbock	122,226	0	0	0	0	0	16,073	37,905	0	0	0	0	5,447	0	0	0	0	0	0	54,187	8,614	0	0
Amarillo	136,610	0	0	0	0	0	25,201	111,409	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	14,522,714	276,515	93,043	2,190	30,153	11,170	4,373,142	7,674,657	370,174	99,442	65,457	187,563	42,968	7,890	17,095	33,081	43,060	402,357	97,605	332,099	73,214	595,515	14,460

Table 3.

	TOTAL	UNKNOWN	SPCL	RESP	ARTH	CP	PARA	QUAD	HENI	HENI	CVA	PRAL	PLIO	PMS	CNS	HO	ANPU	ANPL	ANPA	BATH	BURN	OTHR	??
--Houston/Sealston--																							
HARRIS	8,294,804	25831	64928	2,190	30,153	11,170	2,600,731	4,039,752	192,355	56,128	7,471	45,463	25,043	0	10,338	25,052	39,736	284,302	72,438	213,823	23,440	510,000	14,460
GALVESTON	565,291	0	0	0	0	0	101,925	453,285	0	0	0	0	0	0	6,757	0	3,324	0	0	0	0	0	0
BRAZORIA	336,887	0	0	0	0	0	90,790	169,258	0	0	0	12,608	0	7,890	0	0	0	3,949	0	0	0	52,362	0
FT BEND	570,684	0	0	0	0	0	177,953	345,582	0	0	0	0	0	0	8,029	0	0	0	0	16,169	22,951	0	0
MONTGOMERY	524,357	1526	0	0	0	0	160,775	38,161	0	0	0	18,693	0	0	0	0	22,399	0	0	0	0	17,142	0
LIBERTY	36,738	0	0	0	0	0	14,339	0	0	0	0	0	0	0	0	0	0	7,898	0	0	0	0	0
CHAMBERS	7,898	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19,092	0	0	0	0	0
SAN JACINTO	19,092	0	0	0	0	0	0	41,757	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WALKER	41,757	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRIMES	26,032	0	0	0	0	0	21,819	0	0	0	0	0	0	0	0	0	26,032	0	0	0	0	0	0
BRAZOS	49,934	0	28115	0	0	0	12,457	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BURELSON	12,457	0	0	0	0	0	39,568	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WASHINGTON	68,010	21529	0	0	0	0	23,596	75,143	0	0	0	85,466	0	0	0	0	13,799	0	0	0	0	6,913	0
AUSTIN	198,004	0	0	0	0	0	10,776	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLORADO	10,776	0	0	0	0	0	9,756	2,629	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WARTON	12,385	0	0	0	0	0	0	13,472	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MATAGORDA	13,472	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
--Baytown/Pt Arthur--																							
JEFFERSON	548,104	1178	0	0	0	0	232,147	227,680	0	24,476	39,148	0	0	0	0	0	0	0	0	14,377	0	9,098	0
ORANGE	197,619	0	0	0	0	0	109,555	72,570	0	0	0	0	0	0	0	0	0	0	15,494	0	0	0	0
HARDIN	76,402	0	0	0	0	0	0	76,402	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JASPER	185,029	0	0	0	0	0	0	185,029	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NEWTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
--Nacogdoches--																							
TITLER	80,002	0	0	0	0	0	10,604	56,306	0	0	0	0	0	0	0	0	0	13,092	0	0	0	0	0
POLK	81,684	4155	0	0	0	0	50,391	29,138	0	0	0	0	0	0	0	0	0	0	0	7,399	0	0	0
ANGELINA	29,877	0	0	0	0	0	0	22,478	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAN AUGUSTINE	27,237	0	0	0	0	0	27,237	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SARINE	52,611	0	0	0	0	0	0	32,611	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SHELBY	43,115	0	0	0	0	0	7,281	35,834	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
--Tyler--																							
PANOLA	32,199	0	0	0	0	0	0	32,199	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RUSK	2,998	0	0	0	0	0	0	2,998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CHESTER	72,559	0	0	0	0	0	0	53,721	18838	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SMITH	20,841	0	0	0	0	0	7965	0	0	0	0	0	0	0	0	0	0	0	0	12876	0	0	0
GREENE	28,571	0	0	0	0	0	18057	10514	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARRISON	2,900	0	0	0	0	0	0	2900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LAMAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
--Dallas/Ft Worth--																							
MONTAGUE	40,633	40633	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WISE	62,249	0	0	0	0	0	62249	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLLIN	16,133	0	0	0	0	0	0	16133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PARMER	7,410	0	0	0	0	0	0	7410	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TARRANT	58,966	0	0	0	0	0	6269	45204	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DALLAS	3,749	0	0	0	0	0	0	0	0	0	0	0	3319	0	0	0	0	4174	0	0	0	0	0
JOHNSON	5,307	0	0	0	0	0	0	5307	0	0	0	0	3749	0	0	0	0	0	0	0	0	0	0
KNOX	53,415	0	0	0	0	0	0	53415	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ELAH	66,343	0	0	0	0	0	0	56670	0	0	0	0	0	0	0	0	0	0	9673	0	0	0	0

Table 4.

(Cont. ...)

price for an initial admission of a quadriplegic person runs on the average of \$50,000 for the entire hospital cost. For paraplegia the cost of initial admission is on the order of \$40,000. These charges are of a size that triggers claims review. Because of its high cost, purchasers look more carefully at the quality of the result that they achieve and the kinds and quality of service that are provided. They are also now functioning increasingly as prudent buyers and question increasingly the medical necessity of the service and its price. As the patient becomes more and more a participant in the payment for his service, he will add an additional level of concern to the cost aspect of spinal cord injury services.

B. Market Size and Trends.

In 1980, Amherst conducted a demand study in preparation for our CON application. Included in the "findings of fact" of the Texas Health Facilities Commission, were the following table (Table 5) for spinal cord injury rehab demand, based on incidence and prevalence rates and demographic projections.

1980 Encounters			
	Harris	Texas	Other States
Comp. Rehab. (new)	121	711	10,614
Follow-up (old)	446	2632	39,272

1985 Encounters			
	Harris	Texas	Other States
Comp. Rehab. (new)	145	838	11,018
Follow-up (old)	538	3099	40,767

1990 Encounters			
	Harris	Texas	Other States
Comp. Rehab. (new)	177	1009	11,406
Follow-up (old)	656	3719	42,208

Table 5

The table assumed an essentially linear increase over the period of 4.8 comp rehab cases/year in Harris County, 25.4 cases/year in Texas, and 80.8 cases/year in other states. Follow-up demand was estimated to grow at 18.4 cases/year in Harris County, 93.4 cases/year in Texas, and 299 cases/year in other states. Generally follow-up demand was estimated to be 3.7 times the comprehensive rehabilitation demand over the period. In 1980, TIRR had, according to the study, 18.28% of the Texas comp rehab market and 9.61% of its follow-up demand.

Since time has passed since that forecast we can compare our actual figures with these reference values and forecasts. Using the market size assumptions and forecasting the 1983 Texas market, we have:

	1980 Forecast	1983
Est. comp Rehab	711	890
Actual	130	139
Market Share (%)	18.26	15.62
Est. Follow-up	2632	2912
Actual	253	310
Market Share (%)	9.61	10.64

Because actual incidence and prevalence rates for SCI are not available, they must be estimated. The figures, therefore, are close but not accurate, and variations as above are expected.

In 1983, in Harris County, the forecast market demand would have been 135 comp rehab cases, of which we had 78, or a 57.7% share. Follow-up demand was forecast at 501 cases, of which we had 166, or a 33% share.

Several factors have intervened during the period, and require revision of the market size estimates:

- 1) Nationally, providers have sensed that the incidence of new SCI has declined in 1984 and 1985. Possible reasons are the introduction and success of effective preventive measures: decreased auto accidents due to lower speed limits, the national campaign against drunk driving, more laws increasing the "drinking age", the use of seat restraints, emerging mandatory seat belt laws, and more "crashworthy" automobile design.
- 2) Large employers affected by rising fringe benefit costs have acted to reduce them through prevention measures and safety programs.
- 3) Locally, the depressed economy has curtailed activity in the construction, energy, and steel industries, with less opportunity for accidents to occur.
- 4) Local demographics have changed. The rapid growth of the local population has slowed as Houston began to feel the effects of the national economic changes.
- 5) Financed need is down. With an estimated 15% of the population uninsured, more victims of trauma cannot afford rehab programs. Public sources of indigent care have not kept pace with the need.

Market share expectations are also affected. The advent of the Medicare Prospective Payment System in late 1983 has left beds empty in all hospitals, forcing them to question the need to transfer patients to other facilities (e.g. TIRR). New competitors are arising that tend to geographically localize the markets except for special cases (e.g., our apneic quad program).

Internal Trends. For the period 1980 to 1983, the TIRR spinal cord injury program saw a relatively level number of new paras and quads, with new quads increasing slightly from '81 to '83 (Figure 8). The number of new patients seen each year averaged on the order of 150 or so patients. In 1984, we noted a significant shift in this trend with a reduction of new cases. In 1984, we see about one half of the new para referrals and about a third less new quad referrals. In 1984, the number of patients in the program remained about the same as that in 1983 but the difference was made up largely from seeing more old quadriplegic patients. Because old patients have much shorter stays than the new patients, the number of patient days accounted for by the spinal cord program in 1984 dropped from prior years (Figure 9). This drop was offset in large part by additional patient days in other programs, but most noticeable was the diminution in patient days due to the loss of new patients and a reduction in patient days for old paras.

We expect problems with lack of financing to continue for the next three to five years and not to be significantly alleviated by any effort at the state level for improved coverage of indigent care or catastrophic injury or more state agency funds. The financing problems will have to be worked on over the next biennium. While we expect that our marketing activities will tend to increase volume both for the new patients in which we specialize as well as for the old patients that we follow over time, we expect that any increases gained through these efforts will tend to be offset by increased competitive pressures from other hospitals in our service area and other SMSAs from which we have historically drawn patients. Consequently, we have forecast a level of volume in terms of patient days over the next two years, continuing at the lower 1984 level.

C. Competition.

Our competition depends on the kinds of patients served by our program. There are several patient groups, each of which is susceptible to various forms of competition.

Complex quadriplegics. The TIRR SCI program has a unique market niche when it comes to the medical stabilization, functional restoration, and rehabilitation of the ventilator-dependent quadriplegic patient or quadriplegic patients with complex, multi-system involvement. In this area, our competition is national and only a few highly specialized centers in various parts of the country are able to compete effectively with our clinical abilities and established record of effective rehab results. The other centers who handle ventilator-dependent quadriplegics are: Craig Hospital in Englewood, Colorado, Santa Clara Valley Medical Center, San Jose, California, and Schoitz Memorial Hospital in Waterloo, Iowa.

Quadriplegic patients and high paras or more involved paras. For this patient population we are also in national competition with centers such as Craig Hospital in Denver, Rehab Institute of Chicago, The Institute of Rehabilitation in New York, Santa Clara Valley Medical Center in California (flesh out with Dr. Carter's observations). In Texas, the Dallas Rehab Institute and Warm Springs Rehabilitation Center in San Antonio are our two most significant competitors today.

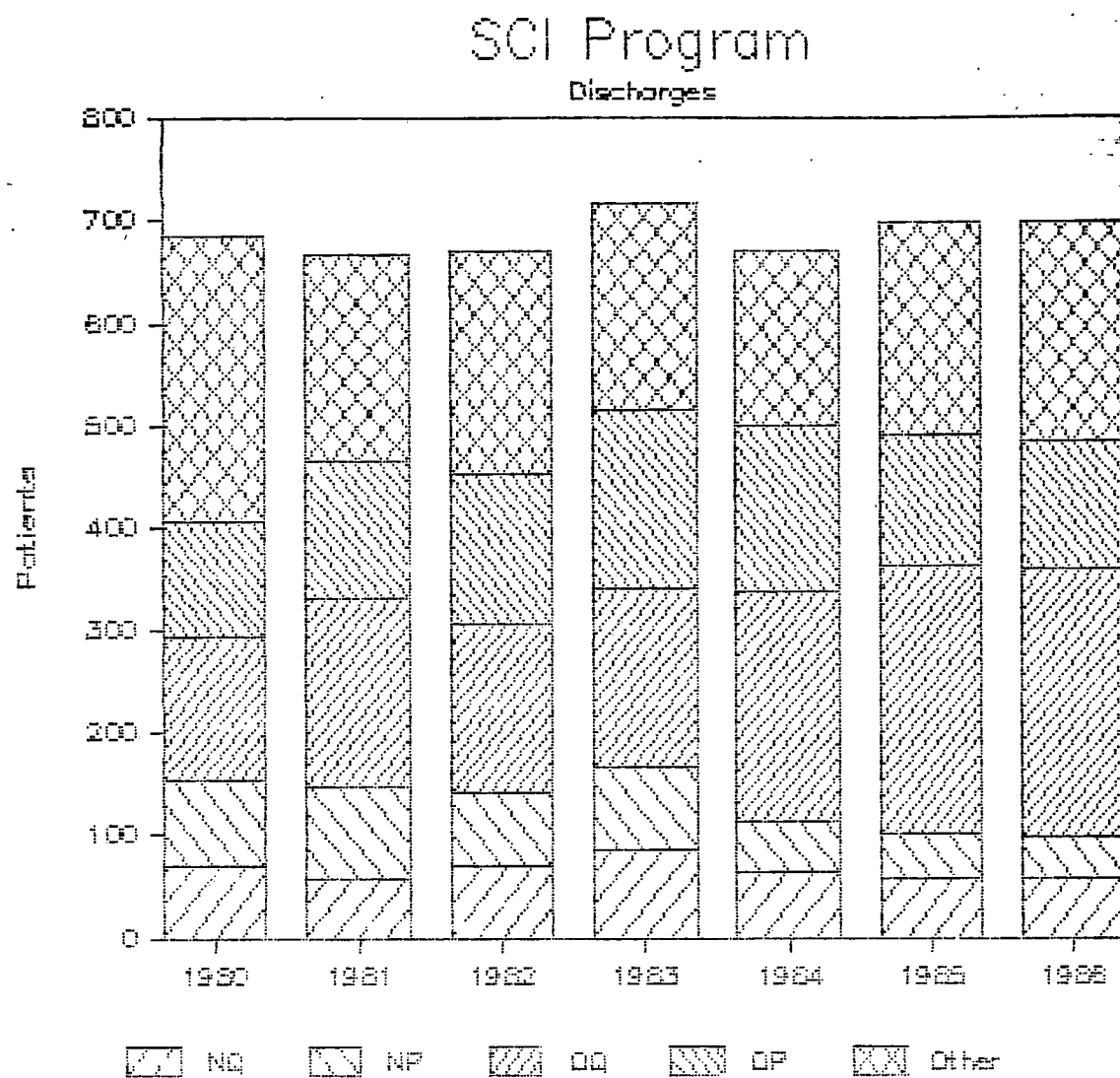


Figure 8.

SCI Program

Patient Days

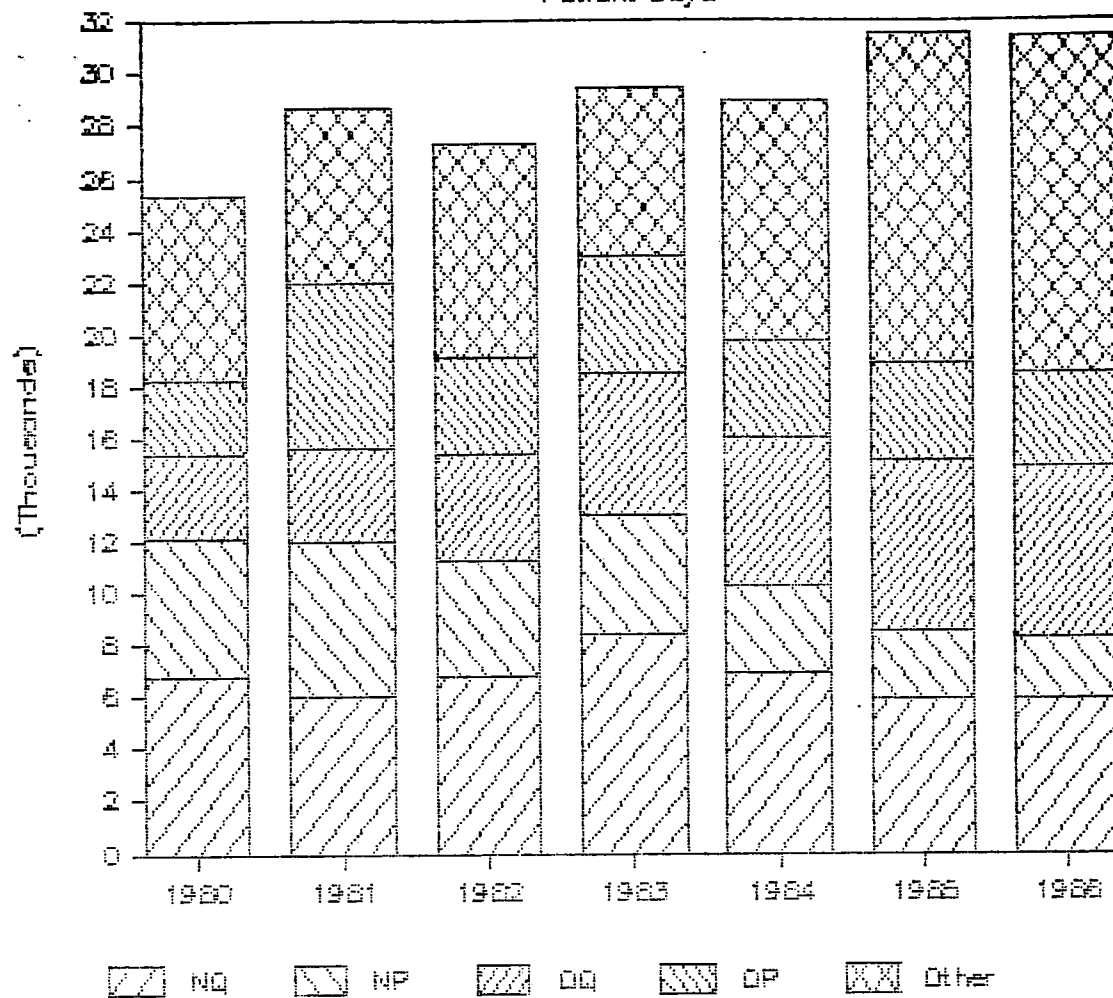


Figure 9.

The uncomplicated paraplegic. More hospitals that establish rehab programs are beginning to determine that the rehabilitation of the uncomplicated paraplegic, especially a low paraplegic, is within the sphere of competence of their medical staff. In this patient population, hospitals with rehabilitation centers in the urban areas of Texas are more likely to retain these patients in their own rehab units rather than transferring them to a more remote rehabilitation center, even for the first admission. They will also be a resource for subsequent encounters, even if a first admission does take place at TIRR. The care would be promoted as less expensive because of decreased travel time required and more convenience for patients and family. In the Houston area, in 1984, an additional 200 rehab beds were approved by the state planning agency and half of them were brought on stream. Some of these beds were specifically slated for the rehabilitation of spinal cord injured patients. We believe that this population would include the uncomplicated low paras, at least initially.

Hospitals entering the spinal cord injury population rehab arena, especially those entering the low end of the spectrum, are many and varied. They include skilled nursing facilities attempting to reclassify beds as rehab beds, small acute hospitals looking for escape from DRG pressures by moving into the rehab market (which is still cost reimbursed). Hospitals, and the large, for-profit hospital chains, are also pursuing revenue maximization strategies through the addition of the cost reimbursed rehab market. National Medical Enterprises (and its recently acquired Rehab Hospital Services Corporation) has established a corporate goal of vertically integrated brand name medicine in which a full range of medical services will be offered within the NME institutions. Their involvement in Texas with the Dallas Rehab Institute and their aggressive interest in the San Antonio rehab market perhaps reflect the most aggressive competitor with our SCI program. It is the one most likely to try to compete with us at upper extremes of the complexity spectrum.

Competitors strengths vary as widely as the kind of hospital that they are. Our most significant competitors have been the national ones like Craig Hospital in Denver that has had a focused, highly specialized program for spinal cord injury patients along with a track record of many years of experience in dealing with this patient population. One of their advantages over us is the shared services arrangement they have with Swedish Hospital that decreases their cost of providing laboratory, x-ray, pharmacy, operating room, recovery room and ICU services. At TIRR, we must sustain the operating costs for the entire functions while at Craig they can take advantage of higher volume operations in an adjacent acute hospital and buy only the services they need. Their price for their service package can be lower and, though their scope may be somewhat narrower, the results are probably as good as ours for comparable patients that they treat.

3. Distinct Program Characteristics.

A. Description. We believe that our spinal cord program in conjunction with the Texas South Central Regional Spinal Cord Injury System offers the best quality care available in the Texas and Gulf Coast area, from the acute stage through total rehabilitation. We have not documented well the long-term outcomes of the rehab process, some of which is not seen for years after the initial rehab encounter. The competitive arena requires, now, that we be able to demonstrate results and outcome, rather than process. Nevertheless, results are felt by the medical community to be among the best available. The program is especially known for its competence in the care of high-risk, ventilator-dependent quadriplegics. In particular, the reputation of the two key physicians and their long years of experience in dealing with this population and history of producing effective results is a particular attraction to the referrer of the complex quadriplegic. When disability is catastrophic, the rehabilitation process after medical stabilization becomes largely one of education. The education and training services offered by TIRR (including the rehab nursing service, the therapy departments and group activities like community re-integration), and the history of dealing with large numbers of patients successfully is another area in which we have a competitive advantage through having a highly qualified staff.

The financial benefits to the payors for SCI rehabilitation are best understood when considered over a period of time. A graphic illustration can be helpful. Figure 10 shows a person's baseline functional ability as it may vary over a lifetime, rising rapidly after birth to a high value, declining with age, and dropping at death. A cord injury results in the curve of Figure 11 which shows an immediate drop and gradual recovery, perhaps over several stages to near pre-injury potential, perhaps with assistive or compensating devices. Comprehensive rehabilitation encounters produce these improvements. When the function level is viewed as a spectrum of institutions, from trauma center, through hospitalization to rehab and independent living or return to work, the cost to maintain a patient for any given time decreases as the patient improves. At work, he can become a net producer.

Our SCI program, therefore, can be evaluated as an investment in decreased future costs through npv methods. However maintenance costs at higher levels of function and decreased recidivism (re-use of facilities) produce economic savings and are consistent with our humanitarian goals of improved personal autonomy and quality of life for the SCI patient.

B. Barriers to competitors entry. The major barrier to entry into the specialized end of the market in which we are involved is the scarcity of qualified and experienced medical staff and clinical professionals who are capable of achieving effective results with this population at whatever end of the complexity spectrum the patients are. New entries into the market will have to establish their competence, and build trust that excellent results will be produced, which can only occur over a period of time during which that competence is demonstrated. The number of specialists in the field is relatively few and they are for the most part located at existing centers, although they may be attracted away by competitors. There are no real barriers to creating a rehab unit in an acute hospital. In fact, there are incentives to do so (until 1986,

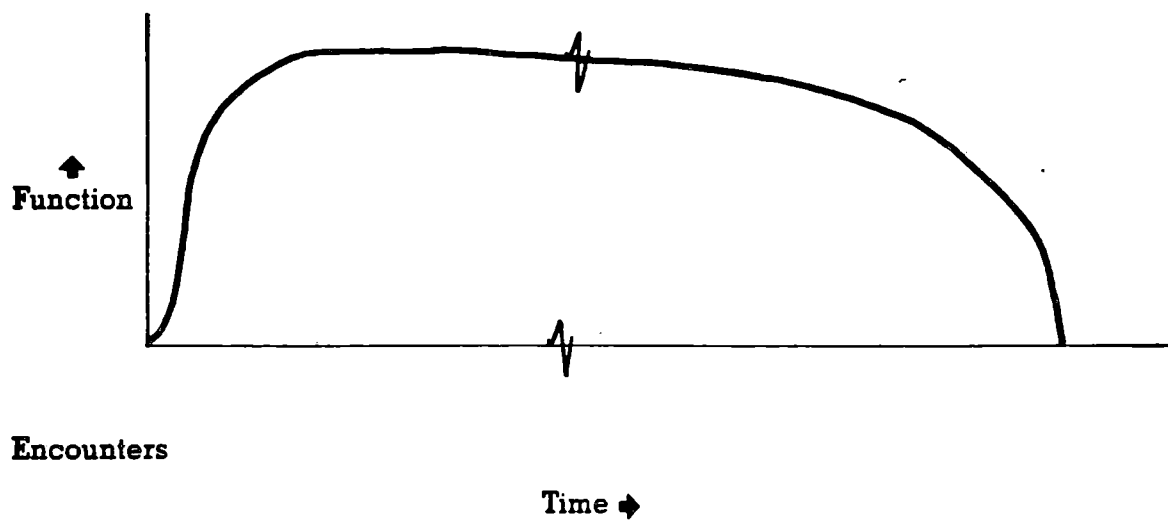


Figure 10

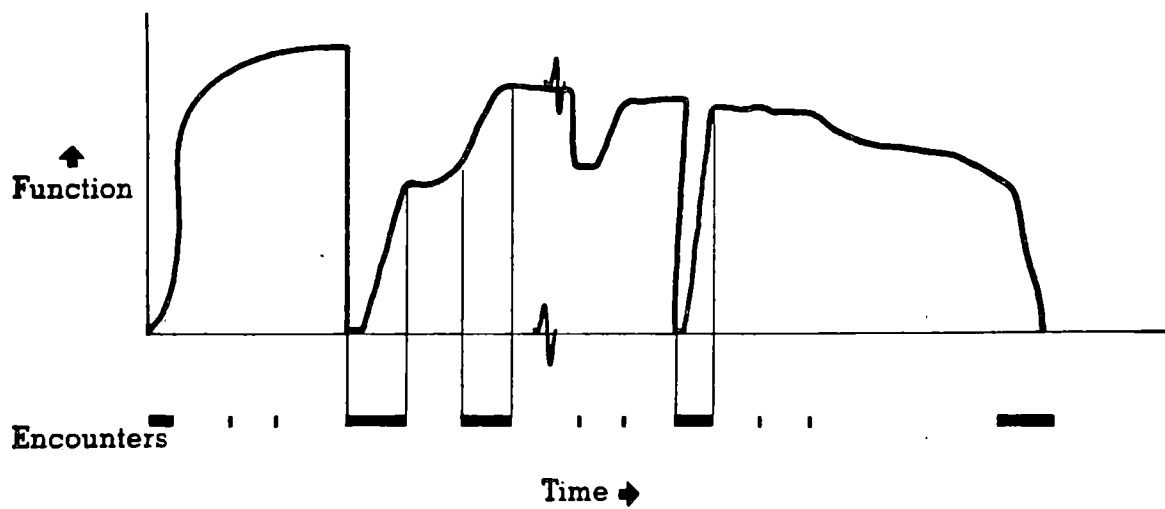


Figure 11

anyway) in order to escape the DRG reimbursement system for the Medicare patients. However, often times this will just result in a shifting of Medicare patient days from the acute hospital to its rehab unit. This move will be expected to produce an increase in reimbursement because of less DRG money being spent during the acute stay and shifting of the remainder of that stay to a rehab unit where it will be reimbursed by the Medicare program at cost.

C. R&D Requirements. The treatment of expensive rehab cases requires continued evaluation and research to determine more cost-effective treatment protocols and mechanisms for achieving a better result with less effort and at lower expense. The ability to conduct research that improves the result and lowers the cost is essential to competition in this area, especially with price competition becoming increasingly of concern.

D. Regulatory Requirements and Approvals. We already have as many regulatory approvals as we require for our program. There are a variety of conditions for participation set up by the new Medicare rules and regs for rehab units but these effectively do not constitute barriers to entry. Competitors that do enter the program must secure a certificate of need and the certificate requires participation in hearings (if challenged) before the Texas Health Facilities Commission. Our spinal cord injury program is accredited by CARF according to spinal cord injury program standards established by that accrediting body in conjunction with the American Spinal Injury Association. CARF accreditation carries no significant regulatory weight as it is not recognized or used in lieu of other review. It is an additional credential that perhaps has market value and builds some credibility.

E. Fit With Present Programs/Products/Services. The spinal cord injury program is the reference standard here since it is by far the dominant program/product/service that the Institute produces. Resources that this program requires are then available for others and, initially at least, a fit of other programs should be considered with respect to this one rather than to fit this one with others. One of the aspects of the spinal cord injury program that does not fit well with our resource configuration is the surgical resources. The operating room is grossly underutilized compared to that of an acute care hospital and we have not yet obtained satisfactory anesthesia coverage that results in convenient and available anesthesia or in a consistent manner over the years. To this extent, it is somewhat inefficient to try to run a surgical service at the Institute. Nevertheless, it makes it possible for the program to deal with the complex cases with a trained team.

4. Marketing Strategy.

A. Target Markets. The implications of the preceding analysis suggest that we market this program on different levels. In particular, we market our high competence in the management of the complex, particularly the high-risk, ventilator-dependent complex quadriplegics on a national basis and, in particular, target the third party insurance carriers that currently constitute over 50% of the revenues to the program. Additional national targets are the workers' compensation carriers, their rehab nurses, and the independent insurance nurses and case management companies that find themselves in a position to recommend a facility to manage the complex quadriplegic. We maintain a national presence in this area to draw additional patients down to Texas to our program. *how*

On a regional level we focus on a 500-mile radius of Houston, including Texas and Louisiana. This is an area where we have historically been able to attract especially the more complex cases. We have tended to exclude Louisiana from consideration when in fact almost \$1,000,000 of revenues came from that state in 1983. The population density tends to spread northeastward up the Gulf Coast from south of Galveston and we now consider at least western Louisiana as part of our service area.

On a local basis, we advance the role of the Institute as a general health care resource for the physically disabled served by the program and to that extent communicate with ex-patients who have been through our program and who live in our local service area where they can be conveniently followed up. In this case we have found that access to our facility can be difficult and must be eased. We are considering a community-based outpatient service or clinic as the mechanism best suited for follow-up with referral to our medical center site only if necessary.

New cases are an important part of our spinal cord injury program. The market for this program is national in scope with greater emphasis on this five-state region and the Gulf Coast in particular. In this broad geographic area, insurance companies, claims adjusters and rehab coordinators (independent companies and rehab nurses) are targets for increasing their awareness of the benefits of and results of our high risk and quadriplegia program. Acute hospitals in the area, particularly those with trauma centers, are also sources of new complex SCI cases. Medical staff in the area and social workers are targets for increasing their awareness of the availability of this program at TIRR.

Old patients are approachable directly through our follow-up program and newsletters.

This program, particularly the complex quadriplegia aspect and especially the new cases, is amenable to positioning TIRR as the preferred provider for the treatment of these kinds of injuries. Direct negotiation with other providers for example the HMOs could result in additional cases from these sources.

Texas physicians who are members of the Texas Medical Association are accessible through their journal, Texas Medicine.

B. Estimated Net Revenue Volume. Revenue volume for the cord injury program has been forecast using estimates of future new cases and old cases (Table 6). New cases in 1983 produced \$48,000 per case while old cases produced 1/3 of that. In 1984, we saw a diminution in the number of new cases. This reduction in new cases was offset by additional old cases to some extent. We expect that increased competition in future years mean that the number of new cases will continue to hover around 100 while old cases continue near 400. Revenue volume then is as shown in the figure with an actual reduction in revenue from cord injury cases being forecast for 1984 when the major shift seems to have occurred. In this year, old cases for the first time produced more revenue than new cases. This trend is expected to continue out to 1987 with revenue growth primarily from price increases alone.

C. Pricing. Our pricing of the program tends to be slightly higher than the programs offered by other hospitals when looked at on a revenue per day basis. When looked at on a per case basis, the figures are more in line, especially where second admission patients for both paras and quads are concerned. The prices need to be held close to the present levels and the profit margin needs to be maintained through cost reducing efforts by improving efficiency in order to stay competitive. A review of productivity statistics for each of the hospital departments and comparison of them with those of our closest competitors suggest that we have opportunities to reduce our costs and thereby should be able to contain our inpatient charges at current levels or, in some cases, reducing them, if necessary.

The pricing strategy currently used at TIRR allows only once price -- the inpatient price. We intend to expand our outpatient encounters and to begin to function in that area much as a physician's office practice. If we are to do so, the cost per encounter will have to be competitive with that of the physician's office which means that the service will have to be priced accordingly.

We are now under prospective payment (the TEFRA version) only for 12% of our volume which is Medicare. An additional 20% also tends toward cost-based reimbursement, but the balance of the volume is from third party insurance and workers' compensation carriers which is all still charge-based.

D. Marketing Plan. The marketing plan for this program is being coordinated with the over-all marketing strategies for TIRR. In that plan we have designed a multi-faceted plan that addressed many areas simultaneously. These are perhaps best discussed from an outside-in approach.

National -- TIRR maintains a national visibility by attendance at selected national meetings of key professional groups. This includes presence at meetings of insurance groups, rehabilitation coordinator groups, clinical professionals engaged in rehabilitation in problem-specific annual meetings like the American Spinal Injury Association and the American Head Injury Association and develops a national prominence in new programs vis-a-vis the Post-Polio Syndrome Conference and our leadership role in developing programs for polio survivors. To supplement the national awareness we maintain visibility in key national markets, both in print media and with public service announcements.

SCI Volume

	1980	1981	1982	1983	(--Actual-- --Forecast--)		1986	1987
					1984	1985		
Bed Days								
New Quads	6855	6023	6790	8355	6930	5900	5900	5900
New Paras	5300	5972	4414	4644	3313	2700	2400	2400
Old Quads	3211	3651	4139	5535	5715	6548	6548	6548
Old Paras	2892	6353	3730	4395	3847	3700	3700	3700
Total SCI Days	18258	21999	19073	22929	19805	18848	18548	18548
Total Bed Days	25304	28730	27348	29484	28950	31500	31500	31500
Other Days	7046	6731	8275	6555	9145	12652	12952	12952
Patients								
New Quads	71	59	71	87	63	59	59	59
New Paras	83	90	71	79	50	43	38	38
Old Quads	139	183	165	175	226	262	262	262
Old Paras	114	132	145	174	161	126	126	126
Total SCI	407	464	452	515	500	490	485	485
Total All	685	668	672	718	672	700	700	700
Total Non-SCI	278	204	220	203	172	210	215	215
% of Total Days	72.2%	76.6%	69.7%	77.8%	68.4%	59.8%	58.9%	58.9%
New Cases	154	149	142	166	113	102	97	97
Old Cases	253	315	310	349	387	388	388	388
ALOS								
New Quads	96.5	102.1	95.6	96.0	110.0	100.0	100.0	100.0
New Paras	63.9	66.4	62.2	58.8	66.3	62.8	63.2	63.2
Old Quads	23.1	20.0	25.1	31.6	25.3	25.0	25.0	25.0
Old Paras	25.4	48.1	25.7	25.3	23.9	29.4	29.4	29.4
Price Increase								
Rev/New Case				48,138	51,989	56,148	60,640	65,491
Rev/Old Case				16,109	17,398	18,790	20,293	21,916
Rev, New Cases				7,990,908	5,874,762	5,727,113	5,882,082	6,352,648
Rev, Old Cases				5,622,041	6,732,918	7,290,341	7,873,568	8,503,453
Total Revenue, SCI				13,612,949	12,607,679	13,017,453	13,755,649	14,856,101

Table 6.

Ten key meetings have been targeted in 1984 with exhibits and marketing staff.

Regional -- Within the region we increase the focus using PSAs and news releases to appropriate markets, maintain a presence in Texas Medicine, the journal of the Texas Medical Association and, in addition, call personally on hospitals and physician referror groups on a periodic basis throughout the state.

More locally (Harris County and two surrounding tiers) we have relations with the key trauma centers in the area with direct weekly visits by our key medical staff and other clinical professionals including the liaison nurse.

With high risk patient referrals from out of state we visit the hospital. Our SCI program director and a social worker evaluate the patient and risk, and are able to inform the transferring facility, family, and payor groups more about our services.

Within Houston, we call on hospitals in the Texas Medical Center including the Harris County Hospital District and participate in medical staff activities. The PSA focus is much greater in Houston with both radio and TV spots as well as newspaper coverage to maintain a name identification. Close working relationships are established with the Texas Rehabilitation Commission which maintains an office on site. We conduct periodic open houses and get acquainted gatherings for social workers from other hospitals as well as insurance coordinators and rehabilitation nurses from time to time and in addition host meetings of disease-specific groups like the Texas Polio Survivors Association and the Texas Head Injury Foundation. We have not created a Texas Spinal Cord Injury Association in which we are active.

We will package a medical staff presentation that could be used to present at the monthly medical staff meetings of area hospitals that have had a history of discharging significant numbers of spinal injured patients.

As data become available from the referral tracking system, we will be able to focus our efforts on specific referrers.

Communications with old patients will be established through a spinal cord center medical newsletter which will permit us to maintain contact with our "graduates".

Our federal Regional Spinal Cord Injury Center grant has helped us to form the Texas South Central Regional Spinal Cord Injury System, a network of facilities that includes TIRR for the treatment of spinal cord injured patients. This network is being formalized as discussions proceed with patient transfer agreements for clinical referrals to and from TIRR and various area hospitals. Generally, TIRR intends to develop a formal network of clinical relationships with area acute hospitals wherein patients who were not treatable at those hospitals because of lack of appropriate services would be transferred to TIRR if those services were available here. Discussions are proceeding with the Methodist Hospital System, the Hermann Hospital System, and Republic Health Care in the northwest.

TIRR has established a Director of Marketing who is a point of focus for all referror relations, especially those which must happen at the highest levels.

If we can arrange for physician participation, we will develop a toll-free 24-hour spinal cord injury hotline, available for providers as well as patients in Texas.

5. Operations.

A. Location. The medical center site is inconvenient for access, especially for outpatients, and the problem will become worse as we move to increase outpatient volume. An off-site outpatient facility with ample parking, easy to access and with only minimal diagnostic or treatment capability as well as a physician - social worker office is important to the future development of the spinal cord injury program. This facility has not been sized or sited at this point.

B. Process The program is mature and fully developed, although improvements continue. It is our largest program. Figure 12 shows the sources of inpatient volume in 1983 by patient group. Note the volume coming from the spinal cord program, as opposed to the amputee program. (AU upper and AL lower and A4 all four), head injury, stroke, burn, back, MS, MD, and polio. It uses our usual multi-disciplinary approach and is led by senior physicians with decades of experience who handle the entire scope of problems that the patient has, engaging and coordinating consultants and specialists as required.

Patient days contributed by the five full time physicians and four of the part time staff are shown in Figure 13. The first three physicians were almost exclusively cord injury. Physician 4 was largely cord injury but included the amputee program.

The charge per case for physicians handling quadriplegics and paraplegics is shown in the graph in Figure 14. Note the close similarities between physicians 2, 3 and 4. Physician 1 tends to handle the more complex cases and is the exclusive physician for apneic quadriplegic population. Physicians 5, 6 and 7 had variable charges due to the fact that they ordinarily handle this patient population but for intercurrent problems of various kinds.

C. Labor Force. TIRR already has an adequate labor force with the training under way. There continues to be a scarcity of physical therapists. Because of the excellence of the Institute's programs, excellent staff are attracted to this program.

1983 Sources of Inpatient Volume

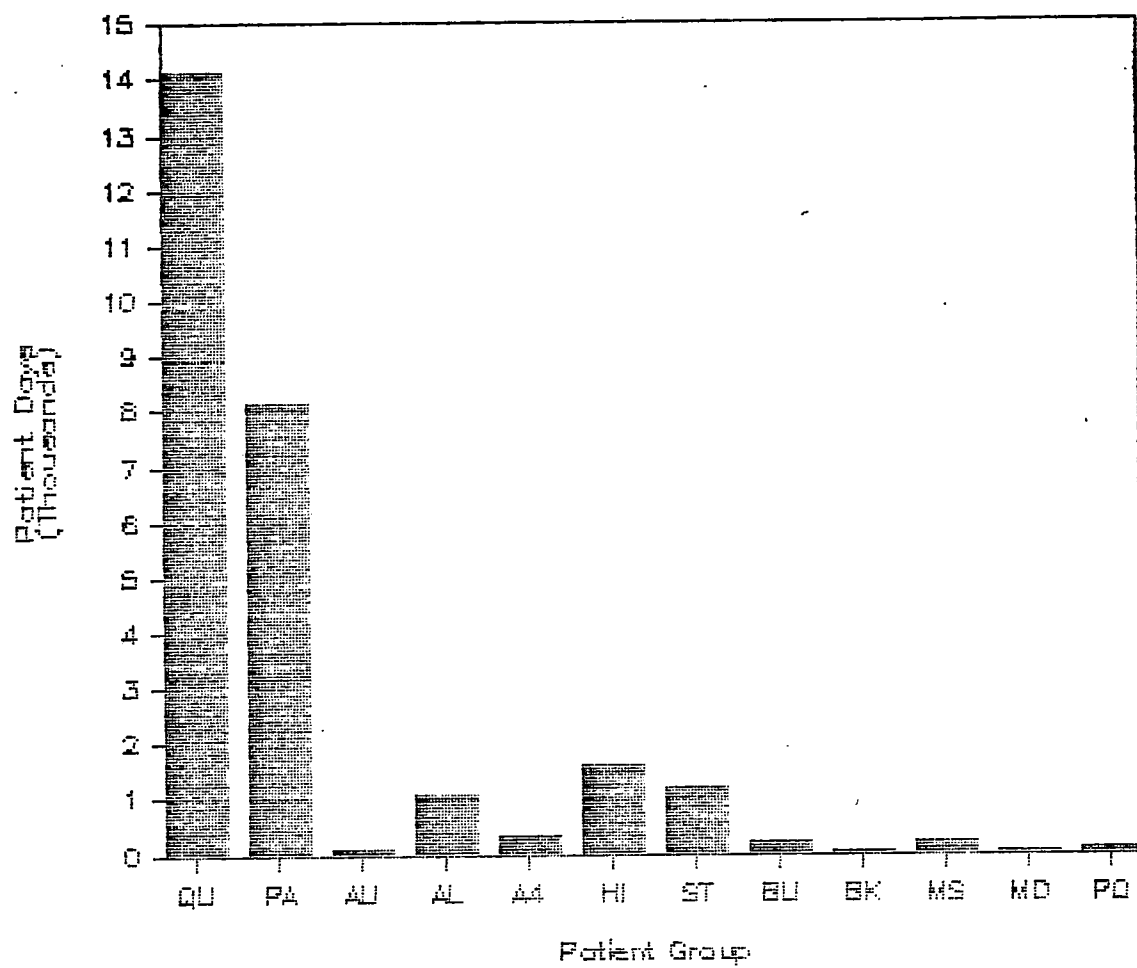


Figure 12.

1983 Sources of Inpatient Volume

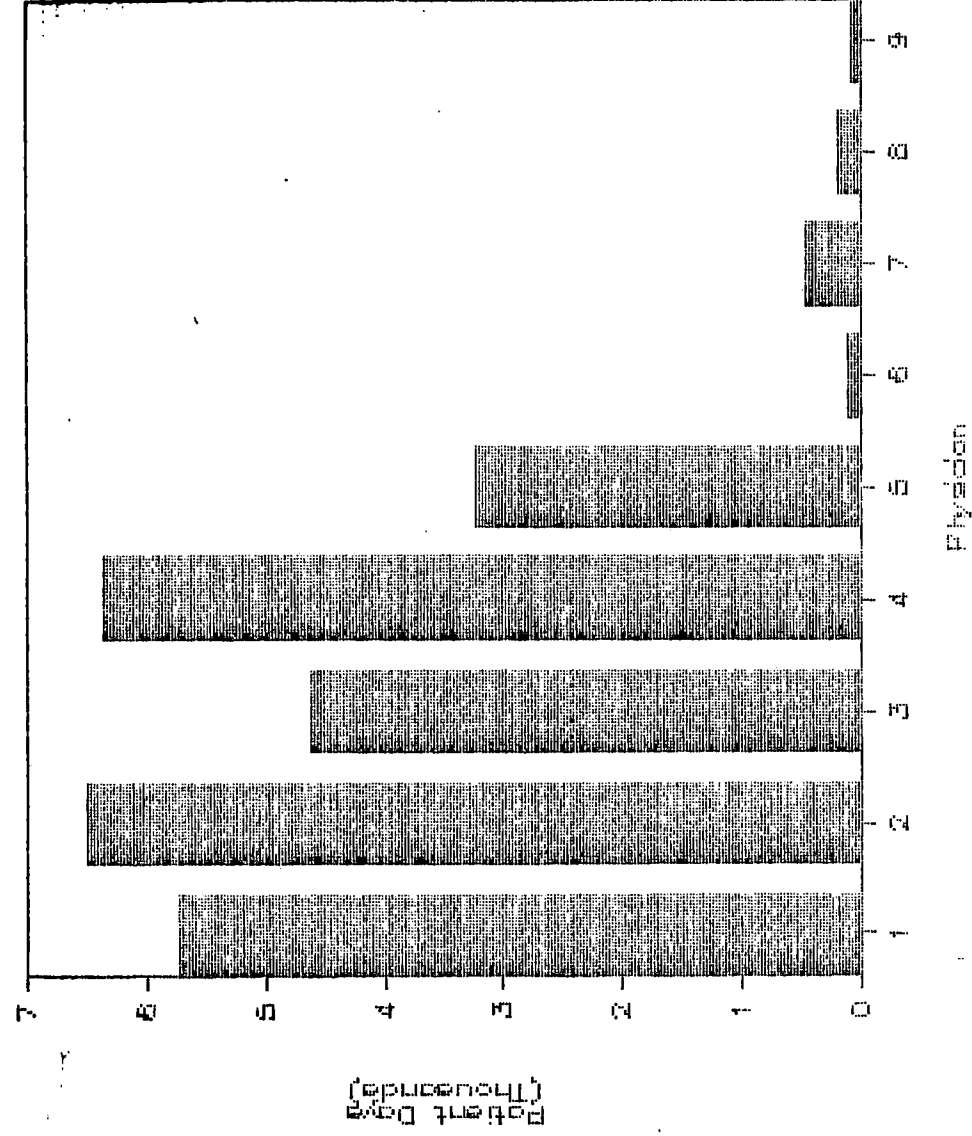


Figure 13.

1983 Charge/Case

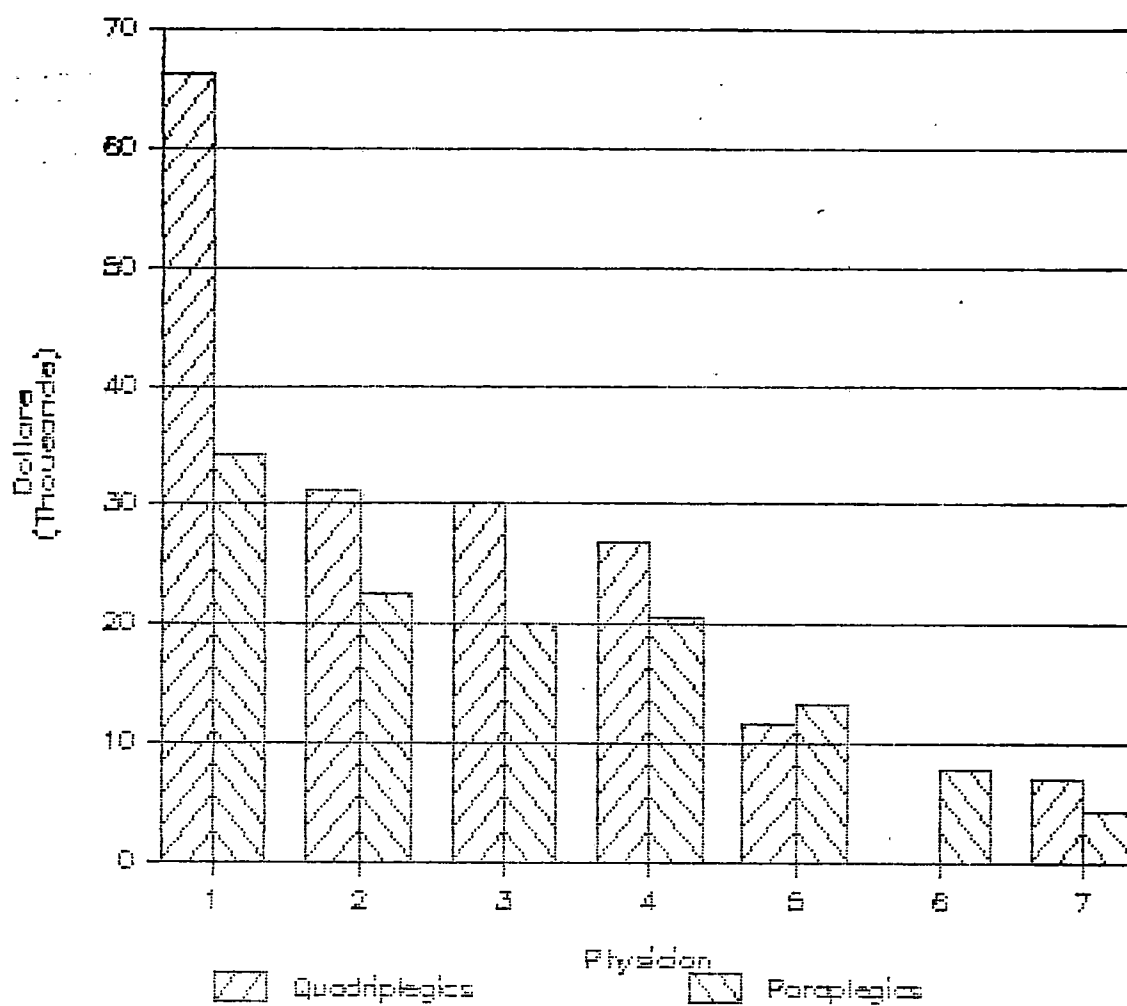


Figure 14.

6. Management and Organization.

A. Organization. The program fits into TIRR's matrix organization, cutting across resource departments and integrating their activities into a coherent whole as needed by the SCI population. Program management is achieved through two senior physicians who function as co-directors. There is an empty program manager slot to handle program administrative and evaluative tasks for the physician directors, who are heavily engaged in patient care, education and research.

The Institute has 25 years experience with problems addressed by the spinal cord injury program and has used a team concept with team rounds in the SCI program. Further improvement of the program protocols by the team and improved coordination of activities provided by the various hospital resources can produce further decreases in cost for the program. Team members have skills that complement and balance each other, and have considerable experience with the program.

B. Key Staff Strengths and Weaknesses and Plans to Cover Gaps. Several programs within the Institute (head injury and amputee) have program coordinator positions that handle the management of the program from the program perspective (rather than a resource perspective) and insure that it operates smoothly and that its various aspects are appropriately managed. The spinal cord injury center lacks such a position, even though it is by far the largest program at the Institute. The organizational structure of the program at the program level is being reviewed and jobs are being redefined to integrate this key position to handle most of the administrative matters of program management for the program directors who, as physicians, are engaged heavily in direct patient care.

Our strengths are in the medical staff involved with the program. Members of Medical Center Rehabilitation Physicians, they have among them decades of experience in dealing with the problem and ample back-up for cross coverage and program continuity. The hospital professional staff, likewise, is for the most part senior with many years of experience in the field. The physicians are faculty of Baylor College of Medicine and are engaged as well in research to improve the program.

For years, we focused on the inpatient side of the SCI demand because of pressures there and limited staff capacity, and indeed on the medical rehab end of the comprehensive rehab spectrum. We are now expanding our spectrum of services in two ways: 1) developing the later stages of the rehab process with more emphasis on independent living and return to work after the major initial admission, and 2) developing a physicians' office practice model to handle the intercurrent problems of "TIRR patients" by restructuring the outpatient services.

We will also position our SCI program to handle the acute problems of these patients. We are better suited than the acute general hospital to handle these problems when they involve a patient with severe physical disability.

7. Timing.

	1985	1986	1987	1988	1989
Integrate outpatient services.	----				
Convert physicians to office practice in outpatient facility.	---				
Market acute general hospital for severely physically disabled	-----	-----	-----	-----	-----
Increase national prominence in management of complex SCI cases.	-----	-----	-----	-----	-----
Reduce costs per case.	-----	-----	-----	-----	-----
Develop alternative financing for catastrophic disability.	--	--	--	--	--
Implement simple longitudinal outcome measure to document benefit.	-----	-----	-----	-----	-----

8. Financial.

A. Program P&Ls. The financial performance of the spinal cord injury program is shown in a broader context in Table 7 which shows inpatient program statistics. The revenues, expenses, and surplus in the total line correspond closely to the 1983 audited figures and were produced by the TIRR financial model. The spinal cord injury program is represented by lines for paraplegia and quadriplegia. These two patient groups provided 508 of the 719 inpatient encounters that year and 77.3% of the total bed day volume. They amounted to \$14.3 million of the \$17.4 million in revenue. This year, our accounting systems did not allow us a differential assignment of deductions from revenues, so the smoothed rate of 7% has been applied to gross revenues to arrive at net revenues. The hospital expenses attributable to the spinal cord program (based on the share of the units of service produced) amounted to \$12.5 million, and thereby contributed \$827,000 to the over-all surplus of \$881,000. This amounted to practically the entire surplus generated by the Institute in that year. The surpluses of other programs were offset in part by losses in still other programs. Our cord injury program had a cost-to-charge ratio of .87 produced operating margins of 6% for paraplegics and 7% for quads.

As mentioned earlier, new patients tend to produce three times the charges that old patients do, largely because of the increased lengths of stay. The net revenue per patient figures represent the weighted average of new and old patient charges net of the deductions from revenue.

On a per patient basis, paraplegic patients tended to generate around \$1300 in surplus each with quadriplegics generating \$40 a patient day in surplus and paraplegics generating about \$45 a day in surplus.

When comparing the financial performance of this patient population against that of other patient groups, it must be borne in mind that the profitability of a patient population depends on the over-all profitability of the resource departments that they use and that the comparisons hold true when small changes are contemplated (e.g., the marginal additional patient day). Massive changes can shift the profitability of the constituent departments so much that the financial model has to be used to determine the interactions involved.

B. Resource Usage. Revenues, expenses and surpluses for the patient groups are derived from component hospital departments according to the number of units of service utilized by the group, the revenue for those units of service, and the expense per unit added into the patient population, weighted by the number of units the population consumes. Details are shown in Tables 8 for quadriplegics and 9 for paraplegics which also show how these patient groups loaded the departments. The tables are derived from the financial model for 1983's patient mix and financial statements. The totals show how many patients used each of the services by percent and number and for the patients who used the service, how many units of the service were consumed. The total units are then displayed. The average price for a unit of service that year is shown along with the net revenue per unit (less the deductions figure). When the costs of the department (plus overhead) are figured the cost per unit can be computed and the surplus per unit determined. In areas where

The Institute for Rehabilitation & Research

1983 Program Statistics
Inpatients

Discharges 719
Total Patient Days 29,080
Average Length of Stay 40.4
Hospital Size at 75% 106

Inpatient Mix	Number	%	Bed-Days	Bed-Days	LOS	Revenue	Deductions	Net Rev	Expense	Surplus	Net Rev/Pt	Exp/Pt	Surp/Pt	Rev/Day	Exp/Rev	Margin
Unknown	3	0.4%	46	0.2%	15.0	17,386	(1,217)	16,169	14,760	1,409	5,330	4,865	464	382	0.85	0.10
Scoliosis	8	1.1%	104	0.4%	12.9	65,281	(4,570)	60,711	84,612	(23,901)	7,504	10,459	(2,954)	627	1.30	(0.28)
Respiratory	2	0.3%	2	.0%	1.0	3,821	(267)	3,553	4,383	(830)	1,757	2,167	(410)	1,889	1.15	(0.19)
Arthritis	2	0.3%	63	0.2%	31.0	30,493	(2,134)	28,359	26,234	2,124	14,021	12,971	1,050	486	0.86	0.08
Cerebral Palsy	2	0.3%	29	0.1%	14.5	11,296	(791)	10,505	9,391	1,114	5,194	4,643	551	385	0.83	0.12
Paraplegia	237	32.9%	8,283	28.5%	35.0	4,831,049	(338,173)	4,492,875	4,190,114	302,761	18,987	17,707	1,279	583	0.87	0.07
Quadriplegia	271	37.7%	14,198	48.8%	52.4	9,470,516	(662,936)	8,807,580	8,282,589	524,991	32,498	30,561	1,937	667	0.87	0.06
Stroke	16	2.3%	889	3.1%	54.9	408,986	(28,629)	380,357	345,230	35,127	23,508	21,337	2,171	460	0.84	0.10
Hemiplegia, Other	5	0.7%	359	1.2%	71.0	169,729	(11,881)	157,848	144,262	13,586	31,218	28,531	2,687	473	0.85	0.09
Cerebrovascular Accidents	4	0.6%	119	0.4%	29.5	51,314	(3,592)	47,722	44,148	3,574	11,798	10,914	884	430	0.86	0.08
Other Paralysis	8	1.1%	376	1.3%	46.5	210,425	(14,730)	195,695	181,596	14,099	24,190	22,447	1,743	559	0.86	0.08
Polio	13	1.8%	103	0.4%	7.8	63,975	(4,478)	59,497	76,637	(17,140)	4,526	5,830	(1,304)	620	1.20	(0.22)
Peripheral Nerve Disorders	3	0.4%	105	0.4%	34.7	59,765	(4,184)	55,581	53,073	2,509	18,321	17,494	827	568	0.89	0.05
Other Demyelinating Disease (MS)	7	1.0%	219	0.8%	31.0	110,934	(7,765)	103,169	94,142	9,026	14,574	13,299	1,275	506	0.85	0.10
CNS Diseases	1	0.1%	24	0.1%	24.0	10,454	(732)	9,723	9,258	464	9,614	9,155	459	431	0.89	0.05
Muscular Dystrophy	3	0.4%	36	0.1%	12.0	24,954	(1,747)	23,208	29,513	(6,306)	7,650	9,728	(2,078)	685	1.18	(0.21)
Lower Back Problems	1	0.1%	17	0.1%	17.0	9,989	(699)	9,290	5,797	3,493	9,187	5,733	3,454	581	0.58	0.60
Amputees, Upper	6	0.8%	100	0.3%	16.5	47,783	(3,345)	44,438	47,168	(2,730)	7,324	7,774	(450)	477	0.99	(0.06)
Amputees, Lower	46	6.3%	1,105	3.8%	24.3	459,767	(32,184)	427,583	417,909	9,674	9,396	9,184	213	416	0.91	0.02
Amputees, Upper & Lower	11	1.5%	311	1.1%	28.0	125,365	(8,776)	116,589	111,244	5,345	10,481	10,001	481	402	0.89	0.05
Congenital Malformations	30	4.2%	635	2.2%	20.9	345,900	(24,213)	321,687	350,742	(29,056)	10,604	11,561	(958)	545	1.01	(0.08)
Burns	10	1.4%	238	0.8%	23.5	98,409	(6,889)	91,520	88,199	3,321	9,050	8,722	328	414	0.90	0.04
Other	28	3.9%	1,715	5.9%	60.6	768,406	(53,788)	714,617	686,113	28,504	25,238	24,231	1,007	448	0.89	0.04
Evaluation Only	1	0.1%	1	.0%	1.0	563	(39)	524	444	80	518	439	79	557	0.79	0.18
Total	719	100.0%	29,080	100.0%	40.4	17,396,559	(1,217,759)	16,178,800	15,297,560	881,240	22,502	21,276	1,226	598	0.88	0.06

Table 7.

substantial losses per unit of service are shown, management attention was directed to improve the financial performance of that area, either by increasing its productivity or by evaluating opportunities for case mix management to improve the loading of departments with higher capacity.

Gross charges, net revenue and total cost and surplus are shown for the entire group of patients along with similar figures on a per patient basis. A comparison of the figures in these two tables show that quadriplegics and paraplegics load the departments quite differently and effects of changes in the numbers of these patients that can be determined quite easily in the financial model.

The surpluses generated by the cord injury program are composed of shares of the surpluses or deficits generated by each of the resource departments the program used, prorated into the cord injury program based on the number of units of service used by that patient population. This can be seen in the tables but is more apparent in Figures 15 and 16 which show the surplus by department in graphic form. In the figure, the letters along the 'x'-axis correspond in sequence to the departments listed as row titles for Tables 8 and 9. Note, for example, the higher use of the Annex by paraplegics than by quads (and that the Annex generates a surplus) and the much higher use of respiratory therapy by quads than by paras. The Intensive Care Unit, which lost the most money in 1983 of any of the departments, received substantial management attention in 1984. In addition to its expansion, its staffing pattern and methods of supervision were changed and its price was brought into line with intensive care units in the medical center. We expect the 1984 figures to show an improvement in the performance of this unit which will be reflected by improvements in the performance of the patient groups that use it.

Efficiency improvements were put into place during 1984 and continued still further in 1985 to decrease the expenses of all departments of the hospital. These actions tend to move more of the individual departments from a deficit to a surplus condition and will have the effect of improving the profitability of all the programs of the Institute. Much of this improvement will flow into the programs according to the share of the resources they use and it can be anticipated that the spinal cord injury program will improve its performance as a result.

The spinal injury program like the other programs at the Institute is not set up as a self-contained accounting entity and does not have full control over the resources. This is of benefit to the program because when the resource is not being used for cord injury it can be used for other programs and the overhead of the resource can be shared with other programs. Consequently, performance P&Ls and balance sheets are unavailable for the program itself but rather are available for the programs in the aggregate, in which case they are the pro formas for the Institute as a whole.

C. Cash flow projections are those for the Institute as a whole.

D. Break even analysis. With the recent addition to bed capacity to increase the Institute's number of available beds to 115, and with recent improvements in productivity which are being put into place, the Institute's over-all break-even point is being adjusted to 65% of occupancy. There will be some variation about this number depending on case mix.

The Institute for Rehabilitation & Research

271 Quadriplegic Inpatients, 1983

Cost Center	Pts Using Service	Pts Using Service (Number)	Units Per Patient	Total Units	Price Per Unit	Net Rev Per Unit	Cost Per Unit	Surp Per Unit	Gross Charges	Net Revenue	Total Cost	Total Surplus	Net Rev Per Pt	Cost Per Patient	Surp Per Patient
Purch Pat Svc	19.8%	53.6	2.04	109.12	683.537	635.689	935.26	(299.57)	74,589	69,367	102,057	(32,690)	1,294	1,904	(610)
Transportation	20.5%	55.6	1.84	102.11	38.129	35.460	38.13	(2.67)	3,894	3,621	3,894	(273)	65	70	(5)
Resp Therapy	51.1%	138.5	357.99	49,595.38	23.474	21.831	11.21	10.62	1,164,202	1,082,708	556,074	526,634	7,815	4,014	3,801
Cardiopulm/ECG	95.1%	257.9	16.31	4,206.87	11.082	10.306	5.55	4.75	46,620	43,357	23,361	19,996	168	91	78
Clinical Lab	100.0%	271.0	60.95	16,518.66	22.587	21.006	16.37	4.64	373,107	346,990	270,412	76,578	1,280	998	283
Radiology	98.1%	266.0	10.13	2,693.89	48.694	45.285	49.22	(3.94)	131,176	121,994	132,603	(10,608)	459	499	(40)
Urodynamics	56.7%	153.7	2.84	435.92	107.311	99.799	146.25	(46.45)	46,779	43,504	63,753	(20,249)	283	415	(132)
Rehab Engineering	1.5%	4.0	1.00	4.05	60.750	56.498	1,022.13	(965.63)	246	229	4,136	(3,907)	56	1,022	(966)
Central Materials	100.0%	271.0	618.47	167,616.02	4.261	3.963	3.12	0.85	714,212	664,217	522,345	141,872	2,451	1,927	523
Clinics	9.3%	25.3	0.12	3.03	138.667	128.960	238.15	(109.19)	421	391	722	(331)	15	29	(13)
Operating Room	36.2%	98.1	2.51	245.72	397.169	369.367	831.57	(462.20)	97,592	90,760	204,332	(113,571)	925	2,083	(1,158)
Nursing Educ	37.3%	101.1	5.47	553.45	25.109	23.351	25.11	(1.76)	13,897	12,924	13,897	(973)	128	137	(10)
Pharmacy	99.6%	270.0	1,190.11	321,333.80	1.696	1.577	1.68	(0.10)	544,982	506,833	538,997	(32,163)	1,877	1,996	(119)
Interm Cath	48.9%	132.5	63.82	8,454.16	69.084	64.248	39.65	24.59	584,047	543,164	335,248	207,916	4,100	2,531	1,569
Sterile Supply	51.1%	138.5	37.21	5,155.37	14.023	13.041	15.95	(2.91)	72,294	67,233	82,244	(15,011)	485	594	(108)
Orthotics	36.2%	98.1	2.08	204.23	171.149	159.169	298.30	(139.14)	34,953	32,506	60,922	(28,415)	331	621	(290)
Vocational Svcs	81.7%	221.5	9.88	2,188.05	37.693	35.054	45.64	(10.59)	82,474	76,701	99,871	(23,170)	346	451	(105)
Social Work	94.4%	255.8	12.44	3,181.97	37.989	35.330	63.09	(27.76)	120,880	112,418	200,754	(88,336)	439	785	(345)
Physical Therapy	91.4%	247.8	36.35	9,006.21	59.400	55.242	49.89	5.35	534,969	497,521	449,359	48,162	2,008	1,814	194
Occupational Therapy	98.1%	266.0	33.43	8,890.45	52.053	48.409	54.79	(6.38)	462,775	430,381	487,087	(56,706)	1,618	1,831	(213)
Neurophysiology	23.9%	64.7	8.98	581.46	99.610	92.637	12.46	80.18	57,919	53,864	7,243	46,621	832	112	720
Nursing-ICU	10.1%	27.3	24.30	663.40	480.000	446.400	962.65	(516.25)	318,431	296,141	638,620	(342,479)	10,846	23,389	(12,543)
Station 2	44.0%	119.3	44.49	5,309.07	295.000	274.350	311.60	(37.25)	1,566,176	1,456,544	1,654,286	(197,742)	12,206	13,863	(1,657)
Station 3	27.6%	74.8	46.88	3,508.01	295.000	274.350	241.17	33.18	1,034,863	962,423	846,042	116,381	12,861	11,306	1,555
Station 4	20.1%	54.6	20.13	1,099.24	295.000	274.350	235.03	39.32	324,275	301,576	258,352	43,224	5,523	4,731	792
Station 5	45.5%	123.4	29.33	3,618.24	294.271	273.672	200.64	73.03	1,064,744	990,212	725,979	264,233	8,026	5,884	2,142
Station 6															
Totals									9,470,516	8,807,580	8,282,589	524,991	32,500	30,563	1,937

Table 8.

The Institute for Rehabilitation & Research

237 Paraplegic Inpatients, 1983

Cost Center	Pts Using Service	Pts Using Service (Number)	Units Per Patient	Total Units	Price Per Unit	Net Rev Per Unit	Cost Per Unit	Surp Per Unit	Gross Charges	Net Revenue	Total Cost	Total Surplus	Net Rev Per Pt	Cost Per Patient	Surp Per Patient
Purch Pat Svc	20.9%	49.6	1.510	74.82	149.50	139.04	204.56	(65.52)	11,186	10,403	15,305	(4,902)	210	309	(99)
Transportation	20.1%	47.5	1.660	78.90	38.85	36.13	38.85	(2.72)	3,065	2,850	3,065	(215)	60	64	(5)
Resp Therapy	26.5%	62.7	74.500	4,671.02	19.35	18.00	9.24	8.75	90,403	84,075	43,180	40,894	1,341	689	652
Cardiopulm/ECG	90.2%	213.4	7.474	1,594.76	13.72	12.76	6.87	5.88	21,879	20,347	10,963	9,384	95	51	44
Clinical Lab	99.1%	234.6	42.978	10,083.06	22.75	21.15	16.48	4.67	229,339	213,285	166,215	47,071	909	708	201
Radiology	96.6%	228.5	6.226	1,422.91	52.36	48.69	52.93	(4.23)	74,499	69,284	75,309	(6,025)	303	330	(26)
Urodynamics	53.4%	126.4	2.664	336.75	101.04	93.96	137.70	(43.73)	34,024	31,642	46,370	(14,728)	250	367	(117)
Rehab Engineering	0.9%	2.0	1.000	2.02	10.00	9.30	168.25	(158.95)	20	19	340	(322)	9	168	(159)
Central Materials	100.0%	236.6	271.145	64,161.83	6.11	5.68	4.47	1.21	392,029	364,587	286,714	77,873	1,541	1,212	329
Clinics	12.0%	28.3	0.071	2.01	235.00	218.55	403.60	(185.05)	472	439	811	(372)	16	29	(13)
Operating Room	31.6%	74.8	1.986	148.62	327.74	304.79	686.19	(381.40)	48,707	45,298	101,980	(56,683)	605	1,363	(757)
Nursing Educ	32.5%	76.9	5.464	419.94	25.30	23.53	25.30	(1.77)	10,624	9,880	10,624	(744)	129	138	(10)
Pharmacy	96.6%	228.5	670.544	153,247.76	1.36	1.26	1.34	(0.08)	208,264	193,685	205,976	(12,291)	847	901	(54)
Interm Cath	50.0%	118.3	40.889	4,837.84	95.16	88.50	54.62	33.88	460,359	428,134	264,250	163,884	3,619	2,233	1,385
Sterile Supply	38.9%	92.0	13.945	1,283.28	15.58	14.49	17.72	(3.23)	19,992	18,593	22,744	(4,151)	202	247	(45)
Orthotics	25.6%	60.7	1.750	106.18	433.57	403.22	755.69	(352.47)	46,037	42,815	80,241	(37,426)	706	1,322	(617)
Vocational Svcs	74.4%	176.0	7.075	1,244.90	37.28	34.67	45.14	(10.47)	46,409	43,160	56,198	(13,038)	245	319	(74)
Social Work	92.3%	218.4	8.693	1,898.82	38.15	35.48	63.35	(27.88)	72,432	67,362	120,294	(52,932)	308	551	(242)
Physical Therapy	88.9%	210.3	24.893	5,236.01	57.68	53.64	48.45	5.19	302,013	280,872	253,683	27,189	1,335	1,206	129
Occupational Therapy	93.2%	220.5	20.274	4,469.44	49.98	46.48	52.60	(6.12)	223,369	207,733	235,104	(27,371)	942	1,066	(124)
Neurophysiology	24.8%	58.7	8.500	498.54	99.82	92.83	12.48	80.35	49,762	46,279	6,223	40,056	789	106	683
Nursing-ICU	5.6%	13.1	14.385	189.12	495.00	460.35	992.73	(532.38)	93,617	87,063	187,750	(100,687)	6,622	14,280	(7,658)
Station 2	42.7%	101.1	22.490	2,274.31	295.00	274.35	311.60	(37.25)	670,920	623,956	708,665	(84,709)	6,170	7,008	(838)
Station 3	24.8%	58.7	34.397	2,017.45	294.91	274.26	241.10	33.17	594,959	553,312	486,403	66,909	9,434	8,293	1,141
Station 4	19.7%	46.5	20.891	971.79	300.15	279.14	239.13	40.01	291,680	271,262	232,383	38,879	5,831	4,996	836
Station 5	47.0%	111.2	25.445	2,830.47	295.00	274.35	201.14	73.21	834,989	776,540	569,324	207,215	6,981	5,118	1,863
Station 6															
Totals									4,831,049	4,492,875	4,190,114	302,761	18,989	17,710	1,280

Table 9.

Resource Use Profile

Quadruplegics

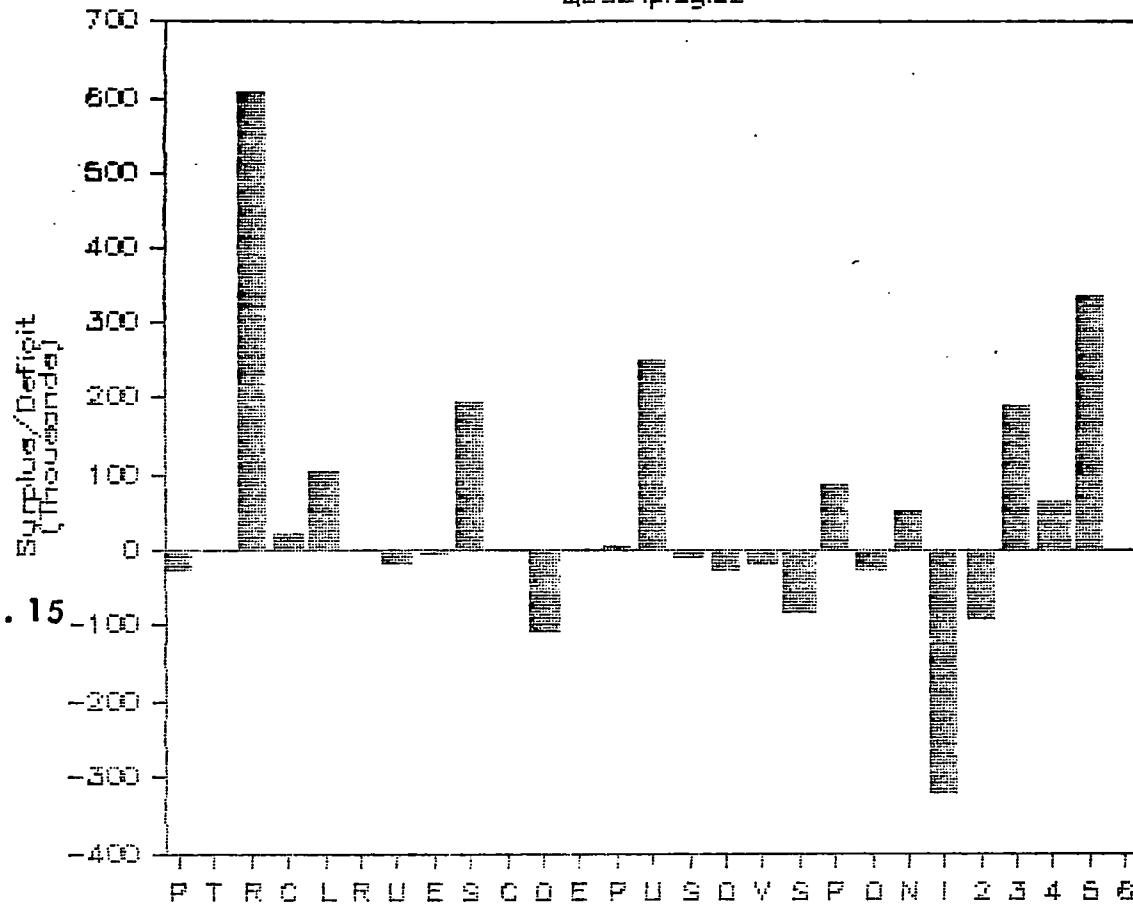


Fig. 15

Paraplegics

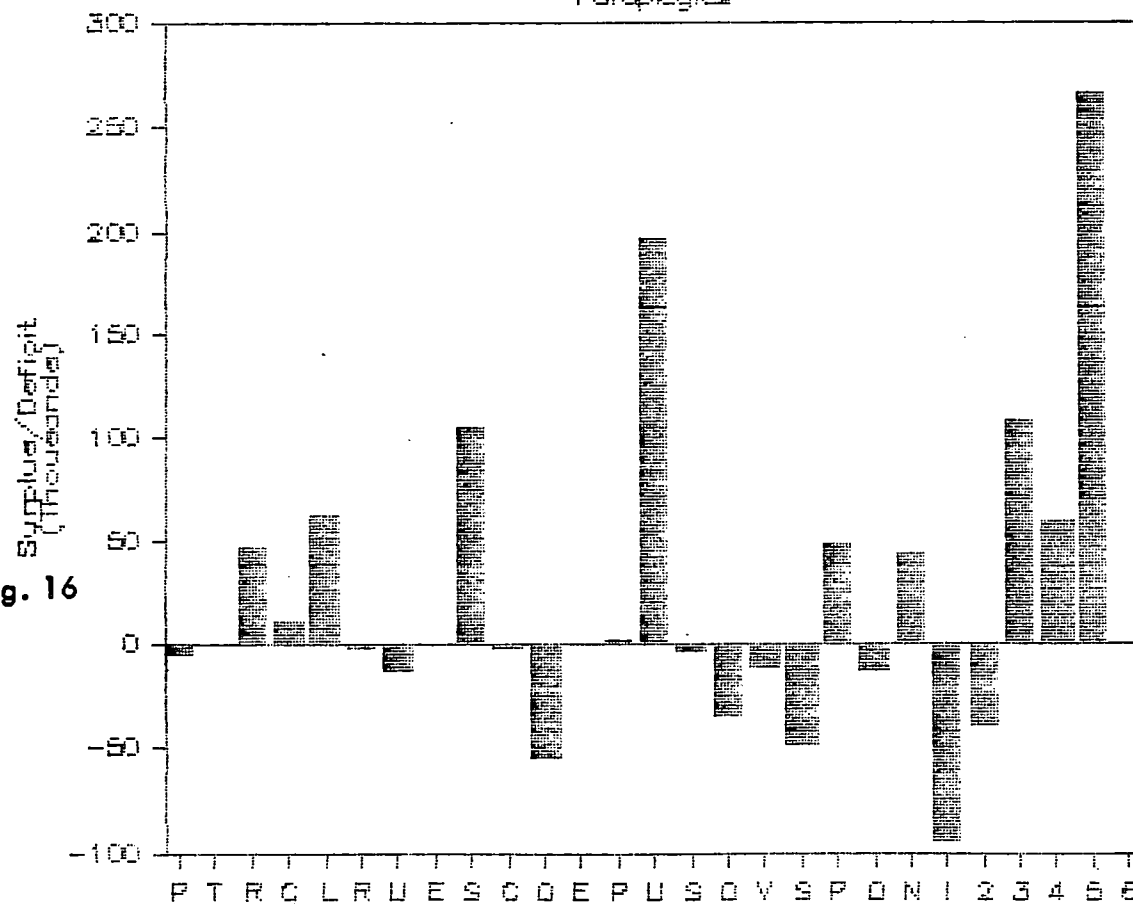


Fig. 16

Departments

The Institute for Rehabilitation & Research

Hospital Collections

Payor	1980	1981	1982	1983	1984	1985	1986
Self Para	38,608	10,474	31,334	54,061	39,154		
Self Quad	205,457	189,098	80,638	106,771	168,077		
Self Both	244,065	199,572	111,972	160,832	207,231	0	0
Insurance Para	743,253	971,803	1,742,132	1,968,520	1,243,821		
Insurance Quad	1,339,970	1,685,302	3,071,322	4,031,474	3,225,929		
Insurance Both	2,083,223	2,657,105	4,813,454	5,999,994	4,469,650	0	0
Comp Para	506,051	830,145	1,011,779	891,781	1,022,666		
Comp Quad	525,089	958,399	1,030,693	1,433,319	707,746		
Comp Both	1,031,140	1,788,544	2,042,472	2,325,100	1,730,412	0	0
BCBS Para	238,801	214,956	196,026	213,947	202,478		
BCBS Quad	481,974	605,693	517,711	554,387	290,864		
BCBS Both	720,775	820,649	707,737	768,334	493,342	0	0
COS Para	328,337	186,918	53,847	169,524	87,750		
COS Quad	362,873	476,868	98,808	424,554	410,259		
COS Both	691,210	663,786	152,655	594,078	497,009	0	0
TRO Para	495,072	604,625	235,842	281,429	553,339		
TRO Quad	341,210	668,826	160,007	423,855	1,246,706		
TRO Both	836,282	1,273,451	395,849	705,284	1,800,045	0	0
Medicaid Para	79,745	217,875	124,956	156,167	114,744		
Medicaid Quad	161,966	274,941	305,221	201,782	471,491		
Medicaid Both	241,711	488,817	432,177	357,949	586,238	0	0
Medicare Para	166,345	252,870	338,956	388,009	668,291		
Medicare Quad	192,471	373,071	571,473	984,543	1,118,988		
Medicare Both	340,816	626,696	1,155,732	1,372,551	1,787,279	0	0
Champus Para	2,694	47,025	21,502	33	0		
Champus Quad	42,541	27,813	193,273	168,001	405,200		
Champus Both	45,230	74,888	219,775	168,034	405,200	0	0
Other Para	64,201	60	36,994	20,982	0		
Other Quad	105,610	151,597	7,432	82,695	11,171		
Other Both	171,025	151,657	44,326	103,677	11,171	0	0
All Para	2,645,087	3,330,751	3,761,171	4,084,572	3,972,847	0	0
All Quad	3,809,174	5,412,414	6,294,578	8,411,551	8,056,777	0	0
All SCI	6,454,257	8,745,165	10,075,749	12,496,123	11,998,580	0	0
Medicare %	5.4%	7.2%	11.5%	11.0%	14.9%		

The Institute for Rehabilitation & Research

Hospital Collections

Paraplegia

Payer	1980	1981	1982	1983	1984	1985	1986
Self Pay	38,602	10,474	31,334	54,061	39,154	0	0
Insurance	743,253	971,803	1,742,132	1,968,520	1,243,821	0	0
Workers' Comp	502,051	830,145	1,011,779	891,781	1,022,666	0	0
Blue Cross	238,801	214,956	190,026	213,947	202,478	0	0
Crippled Child	325,337	188,918	53,847	109,624	87,750	0	0
Tex Rehab Comm	495,032	604,025	235,842	281,429	553,339	0	0
Medicaid	79,765	213,875	126,956	156,167	114,744	0	0
Medicare	154,345	252,870	330,859	388,028	668,291	0	0
Champus	2,694	47,025	21,502	33	0	0	0
Other	66,207	0	36,894	20,982	0	0	0
All Paras	2,645,083	3,332,751	3,781,171	4,084,572	3,932,243	0	0

Quadriplegia

Payer	1980	1981	1982	1983	1984	1985	1986
Self Pay	205,457	189,098	80,639	106,771	168,077	0	0
Insurance	1,339,970	1,695,302	3,071,322	4,031,474	3,225,829	0	0
Workers' Comp	525,089	958,799	1,030,693	1,433,319	767,746	0	0
Blue Cross	481,974	605,693	517,711	554,387	290,894	0	0
Crippled Child	362,873	476,868	98,808	424,654	410,259	0	0
Tex Rehab Comm	391,210	668,026	160,000	427,955	1,246,706	0	0
Medicaid	161,966	274,942	301,121	391,730	471,494	0	0
Medicare	192,471	373,826	824,473	984,543	1,111,983	0	0
Champus	42,546	27,863	191,273	168,001	405,200	0	0
Other	103,610	151,597	7,432	82,657	11,174	0	0
All Quadri	3,869,174	5,412,414	6,294,578	8,411,551	8,059,377	0	0

reports available - then
necessary - interim
containing of completion
re res. + 10/10/83

eg. coverage on med for Xtra Med Center up
SCI report contains data relevant to
but unrepresented in other
reports

Stanley
pH. Vredes
Hoyes
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HOUSTON CENTER FOR AMPUTEE SERVICES

PROGRAM PLAN

Robert H. Meier, III, M.D.
Director

note that SCI
Plan contains
data + procedures
on data that
have been directly
on amputee
but is
unlike
M's 17
from
any other
place

March, 1985

BUSINESS PLAN FOR THE AMPUTEE PROGRAM

I. Summary

The Houston Center for Amputee Services based at T.I.R.R. has developed an increasing number of outpatient since 1978. The typical patient is a healthy young adult male who has sustained a work related injury. The mean age is 27 years, 35% have multiple amputations and 45 have an upper extremity amputation. We have gained extensive experience with this unusual amputee population.

We will need to become more cost effective in our service delivery if we are to continue to "woo" worker's compensation companies. In addition, we must provide these same payors with consistent treatment documentation.

Continued and increased visibility of Amputee Center members at conferences, professional meetings and community functions is important to enhance our referral base.

A better accounting of in- and out-patient statistics, both demographically and financially, would allow us to appreciate the growth trends and revenue generated from amputee care. A series of data retrieval programs should be developed to give T.I.R.R. this important feedback.

II. Market Analysis

A. Potential Customers

The Houston Center for Amputee Services has developed a unique and distinctive population compared with other centers in the United States. We see amputees of all ages from the congenital limb deficient child of a few months to the elderly patient of 90 years.

The majority of amputees evaluated by our professionals have sustained limb loss secondary to trauma. A very high percentage have lost one or both upper extremities and a large percentage are multiple amputees. We have also been referred an extraordinary number of electrical burn amputees who often have undergone multiple limb loss following work-related injuries. Dr. Robert Meier and Diane Atkins, O.T.R., Director and Program Coordinator respectively, have been told on numerous speaking and teaching occasions throughout the country, that the Amputee Program at T.I.R.R. sees the highest incidence of amputees secondary to electrical burn injuries in North America and probably the world.

This population has required us to provide highly individualized rehabilitation programs and specialized prostheses. This has been accomplished by close team work, staff dedication and an extremely high level of professional expertise.

The services of the Amputee Program are often considered a "model" for other rehabilitation institutions rendering care to the amputee patient.

Our services include:

- Rehabilitation Medicine
- Rehabilitation Nursing
- Occupational Therapy
- Physical Therapy
- Orthopedic Surgery
- Social Work Services
- Prosthetic Services

Additionally, when more specialized services are required, the following are also available:

- Vocational Evaluation and Counseling
- Psychologic Services

Speech and Hearing Evaluation and Management
Child Development Assessment
Pain Clinic and Restorative Neurology

We are also pleased with the addition of a "Brachial Plexus Clinic" to our present clinic schedule. There has been a significant need expressed by our consulting orthopedic surgeon and neurologic surgeon that comprehensive management of persons who have sustained a brachial plexus injury has not existed in the Texas Medical Center. To our knowledge, this specialized clinic service does not exist anywhere in the United States at the present time. Again we are unique in the services we provide.

Myoelectric prostheses or "bionic" upper limb prostheses are a technological advance which require extensive experience in limb fitting and training. Our staff has the largest experience in the Southwest prescribing, fitting and training the child and adult in the use of electrically powered upper limb prostheses. This experience is significant in both electrically powered elbows and hands.

Due to the variety and uniqueness of our many specialized services, the Amputee Program at T.I.R.R. has indeed grown significantly in its reputation for quality care and excellent functional outcomes for the individual who has lost one or more extremities.

B. Market Size and Trends

The older dysvascular amputee represents a segment of the population most commonly sponsored by Medicare. Their regulations regarding in-patient and out-patient rehabilitation services will very much influence the potential sources of reimbursement within the next few years. It will be important for the Institute to have "a good handle" on the Medicare reimbursement trends. We anticipate that we would still continue to see a large number of young adult men who have job related injuries and it is conceivable that with further marketing, this population could also increase. This third party funding through

Worker's Compensation is a very concrete and dependable financial resource and should be pursued with stronger vigor than funding for the older dysvascular patient. However, in recent years we have begun to receive more elderly amputee referrals than we had previously seen.

C. Competition

We have local competition with amputee clinics being held on a regular basis at St. Luke's Episcopal Hospital, the Methodist Hospital, Ben Taub, Jefferson Davis and St. Anthony's. Plaza Del Oro and Rosewood Hospitals also have patients with limb loss and prescribe prostheses as well as prosthetic rehabilitation. Probably the largest number of amputees seen in a comparable setting are handled at St. Anthony's Center. This represents an older population that comes from the acute care hospitals in the city of Houston. We have no idea the numbers of their patient load or what their price range would be. We don't really consider these institutions competition for our worker's compensation patients. None of these hospitals have had our upper extremity experience which is undoubtedly one of our strong points at this time. The Dallas Rehabilitation Institute does have what they call an amputee service or center; however it is not known the exact nature of the patient with which they are working. We tend to feel that they are probably working with the older dysvascular patient and not seeing the volume of worker's compensation cases we do. This is particularly true in the area of upper extremity prosthetic training. A number of patients from the Parkland Hospital Burn Service in Dallas are being referred here for upper extremity rehabilitation despite the fact that Dallas Rehabilitation Institute is "in their own back yard".

III. Distinctive Program/Service/Product

A. Description of Program/Service/Product

One of the many attributes that makes us attractive to the market, in comparison with others, is our thirteen years of experience with difficult amputee problems delivered by health professionals who have

a number of years of specialized experience in amputee rehabilitation. The details of our program have been extensively described in the previous section.

IV. Marketing Strategy

A. Target Markets

One of the ways to attract new referrals from the Texas Medical Center will be to essentially "wine and dine" physicians who do a number of upper extremity and lower extremity reconstructive work. This would include vascular surgeons, orthopedic surgeons, traumatologic surgeons and plastic surgeons. This effort would truly target those physicians who initially care for people who sustain limb loss at any level for any reason with the exception of cancer. The oncologic population appears to be self contained at M.D. Anderson and we do not think that it is particularly in our best interest to pursue at this time.

As previously mentioned, it is essential that we, as an Institute, aggressively pursue and market our services to third party payors including the insurance companies, rehabilitation nurses, State Crippled Childrens and the Texas Rehabilitation Commission. It has been our experience that Amputee Center exposure through exhibits and specialized staff presentations at various conferences and seminars has definitely been to our advantage in terms of visibility. We strongly urge that our "visible posture" at conferences be maintained and enhanced since this posture has been significant factor a subsequent increase in our referral base.

Additionally, we are in the process of updating our Amputee Center brochure which will be distributed in the State to physicians in the specialties of physical medicine, vascular surgery, plastic surgery, orthopedic surgery, and pediatrics. Our updated brochure and mailing should be completed by March, 1985.

B. Net Revenue Volume

It will be essential for the Institute to "break out" the actual revenue produced from amputee care, both on an in-patient and out-patient basis. We have asked for this data frequently over the last six years and it has not been provided.

C. Pricing

We are not competitive in the pricing market as it applies to individual hospital charges. This would include both in-patient and out-patient charges for nursing services, supplies and pharmaceuticals. It will be increasingly important to watch these charges. Therapy and physician charges appear to be competitive at their current market level.

D. Marketing Plan

It will be essential that we develop a better way of distributing information to our third party sponsors since this now appears "haphazard" through the I.I.R.R. Medical Records Department. We know that many referral sources are not receiving pertinent or current information in certain instances. We have tried to make up for this by using contact phone calls, however this will never replace printed records.

E. Promotion

These have been previously described in the context of our brochure mailing. Increased visibility at conferences, workshops and seminars will be essential in 1985.

V. Operations

A. Location

It has been increasingly evident that office space for the Amputee

Program is no longer adequate with the addition of new people. We feel it is important to refurbish and redesign office space to more effectively house the Coordinator, administrative staff, the secretary-receptionist, a resident, an Amputee Fellow and a Director. This should be considered in the context of the relocation of an office suite for Drs. Halstead, Carter and Donovan. This relocation and redesign would enhance the sharing of support services that would include the telephone, secretarial services, filing and intercommunication.

B. Facilities and equipment

We foresee a need for a video camera, recorder and monitor in order to do patient education with the use of video tapes. We are planning to produce several video tapes next month for new patients in an effort to better orient them to the amputation experience and to prosthetic fitting options.

Handwritten signature: Dr. Meier

VI. Management and Organization

A. Organization

The majority of the individuals on the Amputee Team have had significant experience in working with patients who have sustained single or multiple limb loss. There needs to be a planned approach to developing an ongoing and in-depth teaching experience among the professional disciplines which would include medicine, nursing, occupational therapy, physical therapy and medical social work. Additionally, Dr. Meier would encourage that any future staff physician be recruited with the understanding that they have some interest in amputee management. This would enable cross coverage with Dr. Meier so that when Dr. Meier is out of town there is a physician in-house who can continue to manage the amputee population. This would mean that clinics would not need to be cancelled or develop backlogs and possible lost revenue.

VII. Timing

A major addition to the Amputee Program will include a 12 month fellowship offered to persons who have completed a residency in Physical Medicine and Rehabilitation. This fellowship would be a joint program between the Departments of Rehabilitation, Physical Medicine and T.I.R.R. because the services provided by the fellow would be split between activities in the Departments of Rehabilitation at T.I.R.R. and the Department of Physical Medicine in other Baylor affiliated hospitals.

VIII. Financial

David Stock has informed us that this is an area we will need to project specifics regarding patient numbers, subsequent revenue, space allocation and therapy services. Dr. Meier has informed me that this is an area he has repeatedly requested financial "print outs" relating to revenue generated from amputee patients treated by the various services on an in-patient or out-patient basis. This information has not been forthcoming and we continue to request the business offices' indulgence to share this information with us.

PATIENT DEMOGRAPHICS

INPATIENT AMPUTEES

1979 (including 1975-79)

Arkansas	3
Conn.	1
Florida	2
Louisiana	21
New Jersey	1
New Mexico	8
Oklahoma	4
Texas	92

1980

Arkansas	1
Louisiana	3
Mississippi	23
Oklahoma	1
Texas	33

1981

Louisiana	2
New Jersey	1
New York	1
Texas	38
Alaska	1
Peru	1

1982

Arizona	2
Texas	49
Mexico	2

1983

Alabama	2
Louisiana	4
Texas	55
Alaska	1

1984 (thru September)

Louisiana	5
New Jersey	1
Texas	31

PATIENT DEMOGRAPHICS

OUTPATIENT AMPUTEES

1979 (including 1975-79)

Texas	303
Wyoming	1
Hawaii	2
India	2
Mexico	4
Guatemala	2
Venezuela	4
Panama Canal	2

1980

Alabama	1
Arkansas	3
Florida	1
Illinois	12
Louisiana	31
Minnesota	1
Mississippi	7
Missouri	1
New Mexico	4
Oklahoma	5
Rhode Island	1
Texas	255
Hawaii	7
India	2
Puerto Rico	4
Mexico	2
Peru	1
Venezuela	9
Panama Canal	2

1981

Arkansas	5
Illinois	1
Iowa	2
Louisiana	14
Mass.	2
New Mexico	2
Texas	253
Hawaii	1
Alaska	3
Costa Rico	2
Peru	2
Venezuela	7
Panama Canal	3

1982

Arizona	2
Arkansas	5
Conn.	1
Illinois	1
Louisiana	13
Mass.	1
Missouri	1
S. Carolina	1
Texas	306
Washington	1
Hawaii	1
Alaska	3
Costa Rica	1
Mexico	5
Columbia	3
Venezuela	2

1983

Alabama	9
Arkansas	1
Louisiana	23
Missouri	9
Oklahoma	2
S. Carolina	3
Texas	300
Hawaii	2
Alaska	6
Singapore	1
Saudi Arabia	1
Mexico	9
Venezuela	4
Panama Canal	3

1984 (thru September)

Alabama	3
Illinois	1
Louisiana	11
Missouri	1
New Jersey	1
Oklahoma	1
Texas	223
Alaska	4
Mexico	6
Venezuela	2

TRENDS IN THE AMPUTEE PATIENT POPULATION AT TIRR

