

ALASKA LEGISLATURE COMMITTEE FILES 1985-1986 86/2

3719

HSTA

HB 661

D. Utilization of Air Ambulance Services

Three air ambulance services currently operate in Alaska: Airlift Northwest, Alaska Medivac Systems, Jet Alaska. Records for each of the three were reviewed for a one-year period. Data on numbers of transports are presented by diagnostic category, origin of transport, receiving facility, and response time. Summary information is reviewed at the end of this section.

Airlift Northwest

Airlift Northwest operates almost exclusively in Southeast Alaska. In 1982, they transported one patient from Anchorage to Seattle, however all other transports were from four towns in Southeast Alaska: Juneau, Sitka, Petersburg, Ketchikan. (Additional specific information can be found in the regional report.)

Table IV-12
Airlift Northwest
Medivacs into Seattle By Diagnostic Category
February, 1982 through February 1983*

Diagnostic Category	Southeast Region
High risk infant	7
High risk mothers	2
Cardiac	14
Poisonings	0
Trauma	15
Head injuries	9
Spinal cord injuries	0
Thermal	3
Behavioral	0
General medical	27
Total	77

* 13 months were used since the service started February, 1982. There were 2 southeast transports in the first month, none in the second month.

Source: Airlift Northwest records

Receiving facility for Airlift Northwest transports is based on a physician to physician referral. The receiving physician determines the hospital admission. The four hospitals supporting Airlift Northwest are listed in the table below. Patients are also transported to hospitals other than the four forming the support group.

Table IV-13
 Receiving Hospitals in Seattle
 for Airlift Northwest Transports
 By Diagnostic Category
 February, 1982 through February, 1983

Diagnostic Category	Children's Orthopedic	Harborview	Providence	University	Other	Total
High risk infant	4	-	-	3	-	7
High risk mother	-	-	-	2	-	2
Cardiac	1	4	5	4	-	14
Poisonings	-	-	-	-	-	0
Trauma	1	13	-	-	1	15
Head injuries	-	8	-	-	1	9
Spinal cord injuries	-	-	-	-	-	0
Thermal	-	3	-	-	-	3
Behavioral	-	-	-	-	-	0
General medical	8	9	2	4	4	27
Total	14	37	7	13	6	77

Source: Airlift Northwest records

Alaska Medivac Systems

Alaska Medivac Systems transports patients from all parts of Alaska though the vast majority are from the Southern EMS region. The table below shows the number of transports by region by diagnostic category.

Table IV-15

Alaska Medivac Systems
Medevacs by EMS Region of Origin
and Diagnostic Category
1982

Diagnostic Category	Southern	Southeast	Interior	NANA	North Slope	Total
High risk infants	8	3	2	1	0	14
High risk mothers	12	1	0	0	0	13
Cardiac	7	0	2	0	0	9
Poisonings	2	0	0	0	0	2
Trauma	18	0	1	0	2	21
Head injuries	9	1	0	0	0	10
Spinal cord injuries	5	0	0	0	0	5
Thermal	4	0	0	0	0	4
Behavioral	0	0	0	0	0	0
General medical	22	1	0	0	0	23
Unknown	1	0	0	0	0	1
Total	88	6	5	1	2	102

Source: AMS records

Receiving facility for Alaska Medivac Systems transports is also based on physician - physician referral. OF the 102 transports, 84% were to the three Anchorage civilian hospitals. Of the transports to facilities other than the three civilian acute care medical hospitals in Anchorage, two were back to the outlying subarea referring hospital, and the rest were to Seattle.

Table IV-16

Receiving Facilities
for Alaska Medivac Systems Transports
By Diagnostic Category
1982

Diagnostic Category	Humana	Providence	AK Native Medical Ctr	Other	Unknown	Total
High risk infant	0	3	1	8	2	14
High risk mother	0	9	2	2	0	13
Cardiac	0	8	0	1	0	9
Poisonings	1	0	1	0	0	2
Trauma	5	11	4	1	0	21
Head injuries	3	5	2	0	0	10
Spinal cord injuries	1	4	0	0	0	5
Thermal	0	3	1	0	0	4
Behavioral	0	0	0	0	0	0
General medical	8	13	1	1	0	23
Unknown	0	0	0	1	0	1
Total	18	56	12	14	2	102

Source: AMS records

Jet Alaska

Jet Alaska also transports patients from all parts of Alaska. Again the majority are from the southern region. The table below shows the transports from each region by diagnostic category.

Table IV-18

Jet Alaska
By EMS Region
and Diagnostic Category
1982

Diagnostic Category	Southern	Southeast	Interior	NANA	North Slope	Total
High risk infant	51	6	5	1	1	64
High risk mothers	17	2	1	0	0	20
Cardiac	10	1	2	1	2	16
Poisonings	1	0	0	0	0	1
Trauma	22	1	3	0	4	30
Head injuries	15	0	0	1	0	16
Spinal cord injuries	4	1	1	0	4	10
Thermal	2	1	0	0	0	3
Behavioral	0	0	0	0	0	0
General medical	21	1	1	0	3	26
Total	143	13	13	3	14	186

Source: Jet Alaska records

Receiving facilities for Jet Alaska are primarily in Anchorage. Of the 186 transports, 12 were taken to non-Anchorage facilities (primarily Seattle, but also other Alaskan facilities) and 3 are unknown. In other words, over 92% of the Jet Alaska transports are to Anchorage facilities.

Table IV-19

Receiving Facilities
for Jet Alaska Transports
By Diagnostic Category
1982

Diagnostic Category	Humana	Providence	AK Native Medical Ctr.	Other	Unknown	Total
High risk infant	1	56	3	3	1	64
High risk mothers	0	16	1	3	0	20
Cardiac	1	8	2	4	1	16
Poisonings	0	1	0	0	0	1
Trauma	2	20	6	1	1	30
Head injuries	3	12	1	0	0	16
Spinal cord injuries	0	9	0	0	1	9
Thermal	3	0	0	0	0	3
Behavioral	0	0	0	0	0	0
General medical	3	16	5	2	0	26
Total	13	138	18	13	4	186

Source: Jet Alaska records

Summary of Utilization and Response Times

A summary of utilization of the three ambulance services operating in Alaska is shown in the table below by region and diagnostic category for 1982.

Table IV-21

Medevac Transports by Air Ambulance Services
in Alaska by Region of Origin
and Diagnostic Category
1982

Diagnostic Category	Southern	Southeast	Interior	NANA	North Slope	Total
High risk infant	59	16	7	2	1	85
High risk mothers	29	5	1	0	0	35
Cardiac	17	15	4	1	2	39
Poisonings	3	0	0	0	0	3
Trauma	40	16	4	0	6	66
Head Injuries	24	10	0	1	0	35
Spinal cord injuries	9	1	1	0	4	15
Thermal	6	4	0	0	0	10
Behavioral	0	0	0	0	0	0
General medical	43	29	1	0	3	76
Unknown	1	0	0	0	0	1
Total	231	96	18	4	16	365

A summary of the receiving facilities for Alaskan transports by the three air ambulance services operating in Alaska is shown in the following table.

Table IV-22

Receiving Facilities
Alaskans Transported by Air Ambulances
1982

Diagnostic Category	Anchorage			Seattle				Other*	Total
	ANMC	Humanal	Prov.	Children's Orthopedic	Harborview	Prov.	Univ.		
High risk infant	4	2	59	4	0	0	3	14	86
High risk mothers	3	0	25	0	0	0	2	5	35
Cardiac	2	1	16	1	4	5	4	6	39
Poisonings	1	1	1	0	0	0	0	0	3
Trauma	10	7	31	1	13	0	0	3	65
Head injuries	3	6	17	0	8	0	0	1	35
Spinal cord injuries	0	1	13	0	0	0	0	1	15
Thermal	1	3	3	0	3	0	0	0	10
Behavioral	0	0	0	0	0	0	0	0	0
General medical	6	11	29	8	9	2	4	7	76
Total	30	32	194	14	37	7	13	37	365

* Includes some within Alaskan, some to other Seattle facilities, some unknown.

E. Military, Coast Guard, Other Public Agency
Involvement in Air Transport

The military groups in Alaska are involved in the emergency transport of patients by air through the Alaskan Air Command Rescue Coordination Center. Table IV-24 shows that 69 medical evacuations were carried out in 1981 by U.S. Air Force units located at Elmendorf Air Force Base. Most of the cases were transported from location of incident to Elmendorf Air Force Base Hospital or Providence Hospital. In some cases, patients were transported from the village to a regional center.

TABLE IV-24

Alaska Air Command
Rescue Coordination Center Emergency Air Transports
By Location of Incident* and Diagnostic Category
1981

Diagnostic Category	NANA	Southeast	Southern	Interior	Total
High Risk Infants					
High Risk Mothers			1		1
Cardiac	1			2	3
Poisonings					0
Trauma	2		20	5	27
Head Injuries			1	2	3
Spinal Cord Injuries	2		3	4	9
Thermal	3		9	2	14
Behavioral	1				1
General Medical		1	6	4	11
Total	9	1	40	19	69

*None reported for North Slope

Source: Alaska Air Command, Rescue Coordination Center
SAR Recapitulation

The Alaska State Troopers are also involved in rescue efforts. For fiscal year 1981, as shown in Table IV-25, 37 people were transported by air.

TABLE IV-25

Alaska State Trooper
Emergency Air Transports
By Location of Patient and Diagnostic Category
FY 1981

Diagnostic Category	Southeast	Southern	North Slope	Interior	NANA	Total
High Risk Infant						
High Risk Mothers						
Cardiac	3		1			4
Poisonings						
Trauma	12	3				15
Head Injuries		1				1
Spinal Cord Injuries	1				2	3
Thermal	3	3		3	4	13
Behavioral						
General Medical	1					1
Total	20	7	1	3	6	37

Source: Alaska State Troopers

Note - Trooper records were quite detailed and include information on all incidents they participated in. When it appeared that there was duplication between Medevacs actually made by Coast Guard or Mast, and troopers primarily provided backup, those evacuations were counted elsewhere.

The United States Coast Guard plays a major role in emergency air transports through their coordination center in Juneau. In addition to providing emergency transport for a large number of patients, the Coast Guard serves as a communication link providing medical consultation services in some cases and advice as to closest medical service (in most cases closest port, but in some cases closest ship with a physician).

Records were reviewed for calendar year 1982. Of the 251 medevac/medico files reviewed, 164 resulted in emergency transport. While most transports involved aircraft, some were performed solely by boat. Most of the 164 emergency transports were performed by the Coast Guard, however 19 were carried out by commercial aircraft, some organized by State Troopers, some by other local residents. Transports overseen by the Coast Guard are shown by diagnostic category in Table IV-26. Trauma and general medical lead in categories of transports.

TABLE IV-26

U.S. Coast Guard
Emergency Transports*
By Diagnostic Category
1982

Diagnostic Category	Transports
High Risk Infants	3
High Risk Mothers	3
Cardiac	14
Poisonings	1
Trauma	55
Head Injuries	5
Spinal Cord Injuries	11
Thermal	7
Behavioral	8
General Medical	44
Unknown	13
Total	164

*Includes 19 transports conducted by commercial carriers.

Source: Review of USCG files.

The originating locations of the transports are shown by region in Table IV-27. The vast majority occur in the Kodiak area and southeast Alaska where the major Coast Guard installations are located.

TABLE IV-27

U.S. Coast Guard
Emergency Transports
By Origin of Patients
1982

Origin of Patients	Transports
Southeast	51
Southern	
Kodiak	71
Aleutians/St. Paul	18
Other	24
Total	164

Source: Review of USCG files.

F. Summary of Utilization Information

In this chapter, data have been presented on numbers of emergency medical air transports from subregional communities into regional centers, from regional centers into the three tertiary referral centers (Anchorage, Fairbanks, and Seattle), and from the two Alaska tertiary referral centers to Seattle and other specialized centers outside Alaska.

Table IV-29 summarizes the data on the three major tertiary referral centers by diagnostic category. Over half of the referrals in all diagnostic categories are to Anchorage. In fact, over three-fourths of the transports in all categories except cardiac and general medical cases are into Anchorage.

Table IV-29

Frequency and Percent of Medevac
Referrals to Anchorage, Fairbanks, and Seattle
By Diagnostic Category

	Anchorage		Fairbanks		Seattle	
	#	%	#	%	#	%
Cardiac	23	52.2	6	13.6	15	34.1
High Risk Infant	57	81.7		1.2	14	17.1
High Risk Mother	60	82.1	10	13.7	3	4.1
Thermal	23	85.2	1	3.7	3	11.1
Poison	7	77.8	2	22.2	0	0
Head	72	76.6	12	12.8	10	10.6
Spinal	62	84.9	8	10.9	3	4.1
Behavioral	14	82.3	0		3	17.6
Trauma	237	75.7	45	14.4	31	9.9
General Medical	238	69.8	47	13.8	56	16.4
Unknown	3	75.0	1	25.0	0	0

HEAD INJURY REHABILITATION

Head injuries or intracranial injuries are a major medical problem affecting hundreds of Alaskans each year. A review of the 1984 State Health Plan for Alaska attests to the severity of this disabling problem. In 1981, 344 acute care hospitalizations carried a primary diagnosis of intracranial injury. Four percent of all work-related injuries reported during 1981 involved head trauma.

Accidents continue to be a leading cause of death in Alaska. In fact, Alaska's accident-related mortality rate is 220% above the national average. Motor vehicle accidents are the leading cause of accidental death in Alaska. With improved emergency medical technology, an ever-increasing proportion of severe injury victims survive. However, many of these survivors suffer from life-long severe cognitive and psychosocial impairment as a consequence of brain damage caused by closed or penetrating head injuries suffered during accidents. Throughout the nation, these individuals were previously ignored after they had received acute medical treatment followed by traditional rehabilitation services such as physical therapy, occupational therapy and speech therapy. Insofar as the cognitive deficits are typically the most debilitating consequence of a head injury (Levin, H.S., A.L. Benton & R.G. Grossman, Neurobehavioral Consequences of Closed Head Injury. New York: Oxford University Press, 1982), many head-injured patients would experience repeated failures when trying to function vocationally and psychosocially. Eventually these victims usually retreated from society, became depressed and vegetated day after day in front of a television.

During the past five years, a nation-wide interest in the appropriate rehabilitation of head injury patients has emerged. The National Head Injury Foundation, in collaboration with concerned professionals, has fostered an increased awareness of the rehabilitation needs of this unique population. Several outpatient post-acute rehabilitation programs have been established in the "Lower 48". Program evaluation data indicate that these specialized treatment programs result in improved functioning of head-injured participants, including a significant increase in competitive employment when comparing treated patients with similar head injury cases receiving only traditional rehabilitation services (see Prigatano, G.P. et al., "Neuropsychological Rehabilitation After Closed Head Injury in Young Adults". Journal of Neurology, Neurosurgery and Psychiatry, May, 1984, pp. 505-513).

Head injury clients usually demonstrate a characteristic set of cognitive and psychosocial changes following acute recovery, due to the nature of the brain injury incurred. Typically, the frontal and temporal lobes of the brain are contused or bruised due to the jarring of the brain within the cranium. Similarly, diffuse tearing and shearing of white matter deep in the cerebral hemispheres and brain stem is

typically involved. The neuropsychological consequences of these characteristic injuries include impairments in memory, planning, judgment, organizational skills, language, attention and concentration. Cognitive processing of new information is notably slower than normal, and significant organically-caused personality changes are frequently observed (e.g., impulsivity, emotional lability, anger or lethargy). These patients are often quite confused in their thinking and display anosagnosia (that is, a failure to recognize their cognitive impairments and a failure to appreciate the implications of these deficits relative to everyday functioning). Inasmuch as brain cells do not regenerate, these deficits can be permanent. Given that the majority of head injuries occur to individuals between the ages of 20 and 30 years, these victims have a long but bleak future to look forward to unless they are successfully rehabilitated to maximize their post-injury functioning.

The Alaska Treatment Center is developing an outpatient head injury rehabilitation program. This is the only program of its kind in Alaska and is designed to meet an important human service need. The Treatment Center is a private nonprofit corporation, which derives financial support for its programs through fee for service reimbursement.

ALASKA TREATMENT CENTER

3710 E. 20th Avenue • Anchorage, AK 99508 • (907) 772-0586


MAR 03 1986

February 21, 1986

Representative Virginia M. Collins
Alaska State Legislature
Pouch V (MS 3100)
Juneau, Alaska 99811

Dear Representative ^{Virginia} Collins;

The enclosed resolution was adopted by the Alaska Treatment Center Board of Directors on February 20, 1986 expressing support for funding through the Division of Vocational Rehabilitation to rehabilitate Alaskans suffering from traumatic head injury. Also enclosed is an article from the Anchorage Daily News reflecting the Center's involvement with Megan Rust, an Alaskan head injury "success story".


Avis C. Hayden
Executive Director

For: Board of Directors

Frank Reed, SR. - President
Harry Brelsford - Vice President
Meredith Sykes - Secretary
Max Campbell - Treasurer
William Campbell - Member
Christine McAfee - Member
Gary McCarthy - Member
James O'Connell - Member
Peter Partnow - Member
Lidia Selkregg - Member
William Nugent - Member

ALASKA TREATMENT CENTER

3710 E. 20th Avenue • Anchorage, AK 99508 • (907) 272-0586

WHEREAS the Alaska Treatment Center for Crippled Children and Adults, Inc has continuously served the physically disabled/handicapped people of the state of Alaska since 1946 by providing quality out-patient therapeutic and rehabilitative programs, and,

WHEREAS the Alaska Treatment Center has prudently managed its program development grant funds so as to sustain programs on a fee-for-service basis independent of ongoing state subsidy, and

WHEREAS the Center seeks to develop a new and much needed program to serve traumatically head-injured Alaskans through intensive cognitive retraining and vocational rehabilitation,

BE IT RESOLVED THAT the Board of Directors of the Alaska Treatment Center requests the members of the 1986 Alaska state legislature to consider the designation of \$250,000 in the budget of the Division of Vocational Rehabilitation to provide a means for eight Alaskans to receive appropriate head-injury rehabilitation services and thereby return to gainful employment.

Frank M. Reed

Frank M. Reed, President
Alaska Treatment Center
Board of Directors

3/20/86
date

Corporate Seal
Alaska Treatment Center for
Crippled Children and
Adults, Incorporated



Once an accomplished pilot, Megan Rust was struck by a forklift on a remote airstrip and has since had to struggle back from a coma in an effort to regain her former abilities. Anchorage Daily News/Scott Helton

To Fly Again: Former pilot fights back from serious head injury

By KIM RICH
Daily News reporter

Out on the runway, the slender blue and white Lear jets and the larger twin engine Otters glisten in the hot sun. Smiling broadly, Megan Rust walks among the planes.

On a remote section of the Anchorage International Airport runway, Rust is at home.

It was on another runway, a little over a year ago, that Rust's airborne dreams came violently crashing to the ground.

It was a day she can't remember, but one she will never forget.

On June 9, 1984, as Rust walked away from a Cessna 402 she had just piloted into the village of St. Marys, she was struck down by a forklift.

The driver never saw her. She saw him too late to get out of the way.

For three weeks, Rust lay in a coma in an Anchorage hospital while her parents, Henry and Alberta, kept a steady, prayerful vigil.

The day Rust opened her eyes, the struggle began to bring her back to the living world she once knew.

At 27, she is a graduate of the Florida aeronautical university — Embry-Riddle. Prior to her accident, Rust was a commercial airline pilot, licensed to fly multi-engine aircraft.

"Most people assume that after a coma, you can walk and talk," Rust says. "That's just not true."

Rust's primary injury was to her brain stem, which connects the larger portion of the brain to the spinal cord.

As a result, Rust's physical coordination, balance and strength were badly affected.

She also suffered a cerebral hemorrhage and a fractured skull in the accident.

At the time, the prognosis for her full-recovery was a blank check of unknowns. At one point, a doctor told her mother that Rust would never talk again. For several months following her initial coma, Rust lay in a coma arousal stage — a dream-like state where fantasy and reality mesh. She could not speak and barely recognized family and friends

around her.

One of her first tests in therapy consisted of a doctor holding up pen and asking her if it was a basketball.

Last November Rust was transferred to Craig Hospital in Denver, Colo., where she underwent months of intensive rehabilitation.

Nowadays, she has speech and physical therapy a half-day each week at the Alaska Treatment Center.

While Rust was told she was lucky to survive the accident, it has taken her a great deal of effort to return to a normal life and her previous accomplishments.

Rust was once rated as having an IQ of 145.

She is ardently striving to reach that mark again. A recent IQ test showed she was nearing her mark.

"I have always worked hard all of my life," she says. "This (therapy) wasn't difficult at all. It was just a different way to work hard."

Rust is employed, but because she cannot now fly as a pilot, she works in the maintenance records section of a local airline.

Rust proudly points out that she drives her own car and owns a condominium.

She is petite, cheerful and bright. The lingering signs of her accident are a slight hobbling walk and a speech impairment due to a partial paralysis of her upper lip.

The braces she wears were put on prior to her accident.

These days she frequently uses a word to describe herself that used to be reserved for others — handicapped.

"A lot of people assume that because I can't talk well, I can't think well — that's not true."

But people with handicaps should not hesitate to tell people about their limitations or what they can accomplish, she says.

Flying used to be second nature to Rust. Now when she thinks about it, she does so carefully and methodically.

"Things that you used to do that would go from point 'A' to point 'B', now have to be re-routed from point 'C,'" she says of her thoughts.

Most head injuries are preventable

About 30 people in Alaska suffer from serious head injuries each year, says Dr. Shawn Hadley, medical director of the Alaska Treatment Center.

Many are preventable.

"Most of them are from auto accidents," she said, adding that motorcycle and all-terrain vehicle mishaps also rank high in the causes of head injuries.

Hadley said the use of seatbelts and helmets dramatically lowers the incidence of head injury.

"I don't think that there is enough

awareness of the causes of head injuries," she said.

While a person's broken limbs usually mend as good as new, the prognosis for the complete recovery of a head-injured person is unknown.

The damage, difficult to measure, can be permanent, Hadley says.

If after experiencing a loss of consciousness, a person continues to suffer from headaches, dizziness or unusual personal behavior,

See Page J-3. MOST

See Page J-3. FORMER

Former pilot now struggles with learning how to walk, talk

Continued from Page J-1

She used to be a "spend-a-holic." She says she is no longer as spontaneous, or compelled.

The study of the head-injured patient is a new frontier in medicine, says Dr. Shawn Hadley, medical director with the Alaska Treatment Center.

Little is known about head-injured people because it has only been through recent medical advances that patients are now surviving what used to kill them, says Hadley.

Neurologists have some ideas of what behavior and intellectual functions are affected depending on what side of the brain is impacted, she says.

But in most head injuries, the damage is diffuse, affecting the entire brain, she says. Even less is known about how information is transmitted from one part of the brain to other.

Depending on the degree of injury and how long a patient is in a coma, the effects range from a drop in intellectual capacity, to radical personality changes, or as in Rust's case, physical impairments.

Someone who was once mild mannered can become ill-tempered, and vice versa. And a once-organized person may find themselves battling a constance feeling of personal chaos.

Each head-injured patient requires individualized treatment involving a team of medical professionals, including among others, a neurologist, therapist and a psychologist, Hadley says.

But, according to Hadley, an even greater challenge is treating head-injured patients

•A lot of people assume that because I can't talk well, I can't think well — that's not true •

Megan Rust

who don't believe they need help.

She says there are an unknown number of people in Alaska who are suffering from the effects of a minor head injury and aren't aware of it.

"I think that there are a lot of people out there who have a problem and don't know what it is," she says.

The signs are subtle; unexplained bouts of headaches, dizziness, inattentiveness, lack of motivation and concentration, and loss of memory.

Hadley says that people with minor head injuries will often attribute the problems to other sources such as their marriage or job.

Diagnosis is difficult because a person can sit and respond to questioning, giving the impression that everything is all right.

"These are things that aren't going to show up for a long period of time," she says. "The typical picture of the head-injured patient is the person who can't initiate things, or get things going."

Changes in the person are apparent to family and friends, but the head-injured person seldom recognizes their own problem, she says.

Rust knows her physical



Anchorage Daily News/Michael Penn

Physical therapist Antonia Fowler watches as Megan Rust walks a balance beam, one of her regular exercises.

liabilities and what she has to overcome in order to fly again.

Her speech will have to be clear, her physical and mental reflexes fine-tuned and sharp.

For now, she will have to

make do with a flight simulator.

But she is hopeful and determined to fly again.

"If you have a head injury," she says, "Don't lock yourself away."

Most head injuries can be prevented by using common sense

Continued from Page J-1

lor, Hadley says the person may be suffering from a brain injury.

A neurological assessment can help measure what brain functions have been affected.

Hadley plans to establish a local chapter of the National

Head Injury Foundation to increase public awareness about head injuries.

The NHIF was established to lend support to the head injured and their families and to help them find proper treatment to return those with injuries to their maximum functioning potential.

According to a newsletter written by the NHIF, 100,000 people die annually as a result of head injuries. More than 700,000 have injuries severe enough to require hospitalization.

Out of this group, up to 90,000 people a year are left with intellectual or behaviori-

al problems that prevent their return to a normal life.

The tragic news, Hadley says, is that two thirds of them are below the age of 30.

To avoid the chances of suffering a serious head injury, Hadley says, "Be attentive to what you're doing."

JMF

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7
November 26, 1985

REC'D NOV 30 1985

Ms. Heather Double
Denali Towers So., Suite 501
2600 Denali St.
Anchorage, AK 99503

Dear Ms. Double:

The enclosed article is sent at the request of Mrs. Shirley Nodell, Regional Vice-President of the National Head Injury Foundation, who thought the material might be of interest to your group. It was originally prepared for presentation at the Washington State Head Injury Foundation Annual Meeting.

Please feel free to reproduce it if you wish but make sure that the complete article is reproduced and that appropriate credit is given to Rehabilitation Psychology Associates.

For those of you who maintain files on available treatment programs, we have also included brochures describing our programs.

Good luck in your efforts.

Sincerely,

Enriqueta Tercilla
Enriqueta Tercilla, Ph.D.
Clinical Neuropsychologist

Judith Falconer
Judith A. Falconer, Ph.D.
Rehabilitation Psychologist

Enc.: Chemical Abuse and Head Injury
Brochure

CHEMICAL ABUSE AND HEAD INJURY

Judith A. Falconer, Ph.D. & Enriqueta Tercilla, Ph.D.

INTRODUCTION

Research studies have repeatedly demonstrated that a disproportionate number of individuals who sustain head injuries have histories of recreational drug and alcohol abuse and, in many cases, had consumed such substances immediately prior to their accidents. Such abuse clearly plays a significant role in contributing to or causing head injuries in this country. For example, Rumbaugh and Fang (1980) state:

The importance of the interrelationship between head trauma and drug abuse cannot be overemphasized. Trauma to the head is a direct result of drug misuse in many of the patients arriving at the hospital emergency room. This is particularly true in the younger age group. The problem is essentially the same as with alcohol abuse except that the alcohol abuse patient is frequently older. Many misuse both drugs and alcohol.

Although recreational drugs and alcohol are the substances most frequently addressed in the professional literature, consideration must also be given to abuse, misuse and mixing of prescription and non-prescription drugs and other more common substances by individuals who have sustained head injuries.

SCOPE OF THE PROBLEM

Those studies which document the incidence of pre-injury drug and alcohol abuse in head injured populations almost invariably fail to state criteria for inclusion in such a category (e.g. how many drinks per day, week, etc. constitute abuse). In addition, the sources of information used to identify such abuse are usually stated in extremely general terms (e.g. "family reports"): the accuracy of the data therefore becomes suspect. But, since family members and friends are unlikely to exaggerate the use pattern of such substances to health care professionals, it is probably safe to assume that research statistics underestimate the severity of the problem. For example, Rimel & Jane (1983) report that 52% of their sample of acutely head injured individuals were considered legally intoxicated (blood alcohol level $>.10$) at the time of injury; 25% had received some type of professional treatment for alcohol abuse and 4% for drug abuse. In the Scandinavian population studied by Tobin, et al. (1982), 51 of 75 patients had histories of excessive alcohol intake and intoxication and were less than 20 years old; 29 of them had histories of drug use including marijuana as well as oral and injectable drugs. Of the 63 patients examined by McLaughlin & Schaffer (1985), 55% were involved with drugs or alcohol at the time of the injury and 38% were known to have had alcohol or drug abuse

problems pre-injury. Given the relatively young age distribution of individuals sustaining head injuries, it is not surprising to discover histories of marijuana use: as of 1979, 50% of people age 18-25 reported some use of marijuana (Schuckit, 1979).

For a variety of reasons, studies of prognosis and outcome following head injury frequently exclude individuals who abused recreational drugs and/or alcohol prior to their accidents, even though such a practice produces a significant distortion of the data. Although it is unclear from research reports how often recreational drug and alcohol abuse continues or arises after head injury, clinical experience suggests it is a significant problem. It is important to note that a pattern of substance use pre-injury, even though unchanged in quantity or frequency, may be one of substance abuse after significant head injury because of physical, cognitive, behavioral and emotional deficits. Thus, the individual who consumed several glasses of beer or several "joints" per day is no longer able to do so without significantly increasing post-injury problems.

It is also critical to address problems in misuse, abuse or mixing of prescription drugs after an individual has sustained a head injury. Medical complications after such an injury frequently result in the need for multiple medications to control physical problems such as seizures, neurogenic bladder, heterotopic ossification, tone and spasticity. When such medications are prescribed by multiple physicians, the possibility of drug interaction and increased side-effects may not be adequately explored. But even when such powerful substances are appropriately prescribed, there is a significant risk that prescribed patterns of use will not be followed. This is especially true of seizure medications but is also seen with psychoactive (anti-psychotics, anti-depressants, and anti-anxiety) and pain medications. Individuals who have documented seizure disorders commonly report that they take their medication only when they "feel a seizure coming on." Family members frequently report failure to administer prescribed psychoactive medications because of the implication that their loved one is "crazy" or discontinue those medications as soon as behavior control is established secondary to the drug. When taking most of the medications prescribed for head injury related problems, consumption of alcohol and/or recreational drugs is clearly contraindicated.

Misuse, abuse or mixing of non-prescription (OTC) drugs may also play a significant role in causing head injuries, may interfere with recovery following a head injury, and/or may complicate long term adjustment to residual deficits. The absence of a documented role of such medications in accident reports, hospital data, or rehabilitation progress notes does not preclude such an effect. In our chemically oriented society, one cannot exclude the possibility of medication interactions and potentiation contributing to the causes and outcome of head injury if the injured individual, in addition to prescribed drugs, consumes OTC preparations for each minor discomfort or symptom. For example, the common practice of taking aspirin for headache relief frequently increases the severity of ruptured brain aneurysms by interfering with normal clotting times: bleeding becomes more

difficult to control. Many OTC medications are known to cause drowsiness, decrease cognition, and lead to confusion and lethargy even when taken in recommended doses.

Clinical experience also suggests that head injured individuals may abuse more common substances such as tobacco, caffeine and vitamins. Given the known metabolic changes following head injury, it is unclear what effects may be experienced when such substances are used in normal quantities much less when they are abused or used in combination with medications, drugs and/or alcohol. Consumption of 10 - 15 cups of coffee per day may well cause significant agitation and restlessness in an individual who has sustained a head injury. Some head injured individuals and their families engage in megavitamin therapy in the belief such a practice will speed recovery; the effect of such a practice is unknown but vitamins are powerful chemical substances which can disrupt metabolism and, in large doses, are clearly toxic.

Thus, although this paper focusses primarily on abuse of recreational drugs and alcohol, it is critical to keep in mind the possible role of these other substances in complicating and confounding the total picture in head injury.

THE CHRONOLOGY OF SUBSTANCE ABUSE IN HEAD INJURY

Paving the Way: Pre-injury chemical abuse

Studies of individuals known to have abused chemical substances (e.g. marijuana, cocaine, alcohol, etc.) document the negative effects of such behavior on the brain. In addition to the observed social, psychological and behavioral problems involved in substance abuse, pathological changes, some of which are irreversible, have been demonstrated within the brain and central nervous system. The absolute amount of brain damage sustained by the chemical abuser depends to a large degree upon the drug(s) utilized, their purity and the frequency and duration of abuse. When a head injury occurs after chemical abuse, pre-existing biochemical and structural damage to the brain is added to that caused by the head injury itself and complicates the clinical picture. Rumbaugh & Fang (1980) make this point very dramatically in their presentation of 6 case studies where drug abuse directly caused head injuries.

As evidence accumulates, it is becoming clear that many individuals who sustain head injuries have histories of other head injuries. In the Tobis et.al. study (1982), for example, 15 of 75 patients had a previous history of head trauma. The Santa Clara Valley Head Injury Rehabilitation Project (1982) reported 11.3% of their sample had previous histories of head injury. It may well be that the previous head injury led (directly or indirectly) to chemical abuse or that chemical abuse was implicated in causing previous or subsequent head injuries.

Confounding the Picture: Acute care

A number of studies have commented on the difficulty of making a

differential diagnosis when a head injury is accompanied by moderate to high levels of blood alcohol or drugs at the time of the injury. The behaviors noted following acute intoxication and overdose are very similar to those following head injury (lethargy or agitation, confusion, disorientation, respiratory depression, etc.). It appears that in some emergency rooms, patients may be discharged with a diagnosis of intoxication when they have also sustained an undiagnosed head injury. Gallagher & Browder (1968) noted that in one-third of 167 patients, alcohol obscured changes in consciousness, leading to misdiagnosis or delayed diagnosis. In 21 of the patients a subdural hematoma was only diagnosed at post-mortem. Galbraith (1976) reports similar diagnostic problems.

Once the acute medical emergency has passed, there is usually time to collect background data on the injured person. When the family and significant others are interviewed they may deny a history of chemical abuse or, in such a stressful time, truly forget that the problem existed. In some instances, the physician may fail to specifically ask about chemical use or abuse; in other cases, the family may be unaware of the extent of the problem or its very existence. In any event, it is clear that many hospital records do not mention chemical abuse histories where clear evidence for such exists.

Within the acute care setting, the stage may inadvertently be set for later problems with chemical abuse. Individuals who experience seizures (or who are at high risk to do so) may be started on seizure prophylaxis. When combative or aggressive behavior is exhibited, chemical restraints may be used for control. Physicians may prescribe medications to induce sleep or decrease pain. The sedative effect of many medications may significantly decrease levels of cognition and make the head injury appear different and/or more serious than it objectively is.

Cracks in the Window: Acute Rehabilitation

By the time the head injured individual enters a rehabilitation setting, physiological withdrawal from recreational drugs or alcohol, if present at the time of injury, has been completed. Unfortunately, psychological dependency has not been addressed so the problem continues to pose an underground threat. The rehabilitation facility may be unaware of pre-existing problems in this area since neither patient nor family members are likely to voluntarily admit to such problems for fear of making the patient appear a poorer candidate for rehabilitation; accompanying medical records may not include this information.

Entry into the rehabilitation setting frequently coincides with or initiates significant changes in prescribed medications as health care professionals begin to address long term issues such as seizure control, continence and spasticity. Comprehensive medical, physical and psychological assessments are completed and predictions about prognosis are relayed to the injured individual and/or family.

In the rehabilitation setting the head injured individual interacts with other individuals who may have histories of drug and alcohol

abuse. In addition, the relative social freedom of many rehabilitation settings allows drugs and alcohol to be introduced or re-introduced into the environment of the head injured individual. Home passes may begin and peers may visit, some of whom may be chemical users.

Of critical importance is the fact that a number of myths exist about the positive effects of drugs, especially marijuana, on a variety of medical problems experienced after head injury. The patient grapevine frequently communicates that such substances decrease spasticity, ataxia, and dysarthria. As a consequence, even the individual who has no history of drug use may experiment with such substances in an attempt to relieve troublesome symptoms. Despite the increased chance of exposure, the rehabilitation setting is quite sheltered and chemical abuse is unlikely to present a significant problem at this point in recovery.

Resuming the Pattern?: Community Care

Once individuals who have sustained head injuries are discharged into the community, opportunities to resume previous relationships and behavior patterns surface. With the structure of the rehabilitation setting withdrawn, the individual has significantly more free time to fill and less activities with which to fill that time. In many cases, former friends rarely visit. While family members eagerly fill the time initially, many of them soon return to their own lives out of economic and social necessity.

Physical, cognitive, emotional and behavioral limitations frequently preclude many favored pre-injury activities. Since the cognitive and physical requirements for successful drug and alcohol abuse are minimal, such behaviors are readily accessible to even severely injured individuals and may well provide both a link with the past and an entre into peer groups. Individuals who previously refused marijuana, alcohol or other drugs may now accept such substances in an attempt to be "one of the guys".

Since most moderately to severely head injured individuals are unable to return to work for extended periods of time (if at all), role reversals and decreased self-esteem become common problems. It is at this point in the recovery process that depression, frustration and boredom may begin to surface. Within the unadapted home and community environments, the full impact of various deficits may be experienced for the first time. Rather than deal with the emotional consequences of such awareness, the injured individual may well seek refuge in the bottle, especially if such a pattern existed in the past.

Unfortunately, it has been well documented that tolerance for alcohol is decreased following head injury so even minimal consumption may rapidly produce intoxication.

For most individuals, consumption of drugs and/or alcohol entails more than an attempt to reach a physiological high: the social settings in which drug and alcohol are consumed are far different from those of the workplace and community at large. Of critical importance is the fact that members of the drug culture are usually more accepting of

cognitive and physical limitations than those in the mainstream culture. In sharp contrast to the rejection experienced by head injured individuals in other situations, members of the drug culture extend a warm and friendly welcome.

The individual who is left with moderate to severe physical and cognitive deficits is frequently unable to independently find sources of drugs or alcohol. Family members, however, may feel uncomfortable denying alcohol to an adult who was previously allowed to drink. The rationale may be "everything else has been taken away; I can't take away that one remaining pleasure." Which is understandable but ignores the fact that tolerance for alcohol is decreased following a head injury and that alcohol, even in small amounts, further decreases cognitive and physical functioning and lowers the seizure threshold. So the memory-impaired individual may rapidly forget consuming alcohol and may have a seizure as a side-effect. In this framework, it may be easier for the caregiver to refuse alcohol.

Those individuals with less severe disabilities may well be able to obtain drugs and alcohol independently. When unsupervised in the community, such substances may be offered to the injured individual. Since many individuals who have sustained head injuries have extremely limited financial resources, they may be unable to purchase such items or may do so at the expense of more essential resources. Head injured individuals have been known to purchase a variety of harmless substances in the mistaken belief that they were buying marijuana: they fall easy prey to unscrupulous drug dealers and pushers.

It is also important to note that the deficits which commonly follow head injury are such that the affected individual may well be questioned and/or arrested by local authorities as drunk or high: slurred speech, unsteady gait, poor memory, and altered moods can quite easily be misinterpreted by uninformed officers. If such situations recur, individuals who have sustained head injuries may soon feel "I got the name, I might as well have the game."

DETECTION

Given the memory deficits experienced by many individuals who have sustained head injuries, expectations of accurate self-reporting of chemical abuse may be unrealistic. The head injured individual may truly not recall having consumed inappropriate chemical substances or may underestimate amounts consumed. At the same time, however, cognitive and behavioral limitations make it less likely that the abusing individual will be able to successfully hide patterns of chemical abuse.

For those involved in providing supervision to head injured individuals, detection of drug and/or alcohol abuse may be quite difficult: symptomatic behaviors following chemical abuse are very similar to those seen in head injured individuals (unsteady gait, decreased memory, uninhibited behavior, euphoria, sleep disturbance, altered appetite, visual disturbances, etc.). Nevertheless, any drug or alcohol effects are superimposed upon the injured individual's typical post-injury cognitive, physical, emotional and behavioral

patterns.

Therefore detection becomes a process of carefully noting decreases in functional abilities which are not explainable on any other basis and which coincide with time periods where alcohol or drugs might have been consumed. It is critical, however, to ensure that such functional decreases are not explainable in terms of acute illnesses (e.g. respiratory infections, hydrocephalus, development of seizures) or newly instituted medications.

On a less sophisticated level, one need only note the odor of alcohol or marijuana on the breath of the injured person or episodic nasal congestion and irritation combined with euphoria in the case of cocaine, to detect abuse of those substances.

PREVENTION

Given the fact that it is extremely difficult to alter established patterns of chemical abuse in individuals who have not sustained head injuries, it is not surprising that the same problem is experienced when working with individuals who are head injured. Since many individuals who sustain head injuries are unable to be competitively employed, the threat of job loss is an empty one. Given social norms which exert strong pressure on family members to take care of individuals who are ill, threats to remove family support are rarely credible.

Repeated attempts to "persuade" the injured individual to avoid chemical substances are usually unsuccessful. This is largely attributable to the kinds of cognitive and behavioral deficits typically found after head injury: decreased judgment and reasoning; impaired abstraction; decreased generalization ability; and impaired memory. Many individuals who have sustained moderate to severe head injuries vehemently deny the existence of any disabilities and feel attempts to change pre-injury behavior are unnecessary and inappropriate.

Probably the best way to prevent chemical abuse following head injury is to ensure sufficient meaningful relationships and activities to maximize quality of life: if there are no voids, there will usually be no attempts to fill them with chemicals. While it is impossible to force others to interact with head injured individuals, caregivers can decrease social isolation by using appropriate behavior management techniques to maximize the social behavior of the head injured individual. Exploration of community services such as support groups, YMCA/YWCA, UCP, adapted recreational services, and community colleges, may aid in the search for appropriate social opportunities.

Wherever possible, the individual who has sustained a head injury should be involved in active rehabilitation attempts to remediate deficits and to ensure maximal recovery. Once the individual's medical status is stable, continued reliance on the medical model may encourage dependency upon medical approaches to deficit remediation, including use of chemicals for behavior control. At that point in the recovery process, cognitive and behavioral rehabilitation approaches

are more likely to be successful in preventing chemical abuse since they require injured individuals to accept responsibility for their own behavior, provide consistent objective feedback on performance, and more directly address the long term deficits which lead to chemical abuse.

Although head injured individuals almost invariably fail to recognize the need for supervision, it is clear that such control over their environment is often necessary. Caregivers who are aware of chemical abuse problems need to ensure that cues to engage in such activity are withdrawn from the environment. Alcohol may need to be removed from the house or stored in locations which are inaccessible to the injured individual. This may also include denying opportunities for social relationships with pre-injury friends who are known to use and/or abuse chemicals. Obviously, the caregiver becomes the "heavy" when such tactics are required but there is no reasonable alternative in such situations. Reasonable limitations on access to funds may be necessary to prevent the purchase of chemical substances.

The physical and medical deficits following head injury are frequently so wide-ranging that multiple physicians are involved in diagnosis and management. Therefore, to forestall the misuse or abuse of prescription drugs, it is critical that a single physician assume responsibility for medication management. Such a practice minimizes undesirable side-effects of powerful medications and ensures continuity of care. Adequate monitoring of medication consumption to ensure that prescribed schedules are followed, however, remains the responsibility of the head injured individual or caregiver. This is especially true of seizure medications, which have been reported as having a relatively high rate of non-compliance. Many head injured individuals reject these medications because of their sedative effect: even when taken in therapeutic doses, they are known to decrease attention and concentration, impair memory, and otherwise negatively affect cognition. Nevertheless, there are multiple reports in the literature which implicate changes in or withdrawal from seizure medications as precipitating seizures (including status epilepticus) when alcohol is consumed. The nature of such events has been well-stated by Victor (1979):

It should be noted that in patients with idiopathic and posttraumatic epilepsy, the onset of which frequently antedates the patient's alcoholism, the seizures are made worse and more frequent by drinking. In these patients, seizures may be precipitated by a relatively short period of intoxication, e.g. an evening or weekend of heavy social drinking, but the factor of withdrawal is still operative, in that the seizures tend to occur not when the patient is intoxicated but the morning after, i.e. in the "sobering-up" period.

In many instances, it will be necessary for family members to administer and control prescription medication to ensure compliance. When there is any possibility of non-compliance, it is worthwhile for a responsible individual to periodically count the actual number of pills remaining and to monitor prescription refills.

An area in which prevention is especially critical is abuse or misuse of non-prescription drugs. With over 500,000 separate compounds available, many of which have not been carefully evaluated and which have not been proven effective, the range of choices is almost unlimited. Nevertheless, such products should be avoided by individuals who have sustained head injuries unless authorized by their primary physician. Family members need to carefully supervise such substances within the home to ensure that abuse does not occur and result in increased problems for the individual who has sustained a head injury.

CONCLUSION

Chemical abuse can frequently be prevented, even when it was present prior to the injury. While many individuals with a history of chemical abuse may benefit from formal drug and alcohol rehabilitation programs, such programs are not designed to directly address the physical and cognitive limitations of those who have sustained head injury. Should enrollment in such a program be considered, it is essential that program personnel be fully apprised of the medical problems of the head injured individual to ensure that medical needs are met.

Family members must, however, be aware that some individuals who sustain head injuries will continue with or develop patterns of chemical abuse which are intractable. While this is an unfortunate situation, feelings of guilt and failure are not justified if reasonable attempts, including enlisting professional assistance if necessary, have been made. It is unrealistic to expect all individuals who have sustained head injuries to avoid chemical abuse when it is so prevalent in our society.

Although the professional literature has generally failed to address the problem of chemical abuse in head injury populations, family members and individuals who have sustained head injuries are painfully aware of the magnitude of the problem. To a large extent, the failure of the medical and rehabilitation community to recognize this problem can be directly attributed to the lack of long term care and follow up of individuals who have sustained head injuries and to the lack of meaningful alternate activities in the community. Until those who are intimately involved in head injury prevention, treatment and rehabilitation become more aware of the problem, it is likely to continue to be ignored, with potentially disastrous consequences.

Nothing in this paper should be construed to imply that all individuals who sustain head injuries are alcoholic and/or junkies. The majority of head injured individuals have no chemical abuse problems and will not develop them. But ignoring a significant problem does not make it go away.

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Chapter 15

BEHAVIORAL CONSEQUENCES OF CLOSED HEAD INJURY¹

ARTHUR BENTON, M.D.*

I. Introduction

Cognitive defects, emotional disturbances and "personality change" have always been recognized as salient and sometimes permanent sequelae to the acute phase of a head injury. Among the features of this posttraumatic symptom-complex are: (1) impairment in attention and concentration; (2) fatigability; (3) disturbances in memory; (4) emotional instability and lowered tolerance of frustration and noise; (5) personality alteration in the direction of either depression and withdrawal or disinhibition and euphoria; (6) aphasic deficits; (7) basic and higher-level sensory deficits of various types. Some symptoms occur with remarkably high frequency as late effects of head trauma. Caveness (1966) found in a sample of 281 military men examined 5 years after head injury that 41 percent complained of inability to concentrate, 47 percent of excessive fatigability and 42 percent of impairment in memory, the base rate for these complaints in a control group of non-injured military personnel being about 10 percent. Forty percent of the men manifesting these features of the posttraumatic "syndrome" had failed to make a satisfactory socioeconomic adjustment, as compared to 11 percent of the controls.

Any of these cognitive and emotional changes can occur after closed head injury from blunt trauma as well as after penetrating brain wounds and it is sometimes suggested that, in studying their sequelae, a sharp distinction between the two types of trauma is not justified (cf. Teuber, 1969). However, the *modal* posttraumatic behavioral pictures are different. Specific cognitive impairments indicative of focal brain injury, such as aphasic disorders, sensory defects and higher-level perceptual deficits (i.e., "agnosias"), in combination with neurological signs of focal damage, occur much more frequently after penetrating brain damage. The more common picture after closed head injury is a constellation of relatively vague complaints of impairment in concentration, disturbances in memory and emotional instability with a paucity of specific neurological signs of cerebral abnormality. This set of more general complaints or deficits, which may occur after relatively mild closed head injury, is sufficiently distinctive to be often designated as "the" posttraumatic syndrome. Nevertheless, highly specific cognitive deficits such as one or another form of aphasic disorder may occur as a persisting consequence of blunt trauma, particularly in older individuals (Welte, 1948; Hibom, 1960; Ota, 1966; Heilman et al., 1971). Conversely, posttraumatic emotional instability with irritability is not an uncommon sequela of penetrating missile injury (Lishman, 1968).

The question of the behavioral sequelae of head trauma in children presents its own peculiar problems. The lack of firm establishment of hemispheric specialization of function and the greater possibilities for restitution of function after injury in the developing nervous system lead to the expectation that the main consequence of trauma would be a general lowering of cognitive abilities with a paucity of focal defects such as aphasia. Moreover, a swifter recovery of function might be anticipated because of the greater "plasticity" of the immature nervous system. Yet psychiatric disturbance in various forms appears to be extraordinarily frequent (Leischner, 1962; Klonoff & Paris, 1974; Shaffer et al., 1975). However, systematic comparative studies of the consequences of head trauma in adults and children, using the same methods of assessment and focusing on the same cognitive and behavioral characteristics, have not been undertaken. It is possible that such controlled study would disclose fewer differences in the symptom-picture, course of recovery and outcome than

* Departments of Neurology and Psychology, University of Iowa

¹ I am greatly indebted to Dr. Harvey S. Levin for his valuable suggestions and criticisms.

EXECUTIVE ORDER
35-6

WHEREAS, there are an estimated 10,000 head injuries in the State of Missouri each year which physically disable and intellectually impair some of our citizens for a lifetime; and

WHEREAS, more than 700 persons each year will die as a result of head injuries; and

WHEREAS, head injury is the major cause of death and disability among Missourians under the age of 35; and

WHEREAS, the State of Missouri should assume a leadership role in the collection and dissemination of information about head injuries and the appropriate response of government and private groups to prevent them and treat those who suffer them; and

WHEREAS, the State of Missouri offers a wide range of services to persons with head injuries, and appropriate placement of head injured persons in these programs is critical to the individual's potential for recovery, and important to the state's desire to provide appropriate service in a cost-effective manner,

NOW, THEREFORE, I, JOHN ASHCROFT, GOVERNOR OF THE STATE OF MISSOURI, by virtue of the authority vested in me by the Constitution and laws of Missouri hereby create and establish the Missouri Head Injury Advisory Council. The Council shall be composed of 25 members appointed as follows: 2 members of the Council shall be members of the House of Representatives and appointed by the Speaker of the House of Representatives, to serve for the remainder of their terms; 2 shall be members of the Missouri Senate and appointed by the President Pro Tem of the Missouri Senate, to serve for the remainder of their terms; and 21 members shall be appointed by the Governor, representing persons with head injuries, representing relatives of persons with head injuries, representing proprietary schools, professional groups, health institutions, private industry, and state agencies which administer programs regarding mental health, education, public health, public safety, insurance and Medicaid. The appointment of individuals representing state agencies shall be conditioned on their continued employment in their respective agencies.

The Missouri Head Injury Advisory Council is assigned to the Division of General Services in the Office of Administration. Members of the Council shall receive no compensation for their service but shall be reimbursed for their actual and necessary expenses incurred in the performance of their duties. Members of the Council appointed by the Governor shall serve at the pleasure of the Governor.

The Council may study and recommend action by private and public entities on the following items and on others it may select:

1. Methods for identifying the extent of head injury in Missouri.
2. A statutory definition of "head injury".
3. Appropriate entry points for head injured persons seeking services from state agencies.
4. Rehabilitative placement opportunities which can be provided with public or private resources.
5. Methods for establishing and funding transitional living centers for the head injured.
6. Methods for advancing the practice and availability of cognitive retraining therapies.

7. Improved coverage by all third party payers for treatment and rehabilitation in institutional, in home and in other settings.
8. Protection of the personal and civil rights of head injured persons.
9. Head injury preventive education.
10. Opportunities for obtaining federal funds through the National Institute of Health Research (NIHR).

The Council shall meet when called by the Chairman, but at least quarterly. The Council shall elect annually one of its members to serve as Chairman. The Council shall adopt written procedures to govern its activities. Staff and consultants shall be provided for the Council from appropriations requested by the Commissioner for such purposes.

The Council shall report annually to the Commissioner of Administration on its activities, and on the results of its studies, and shall include any recommendations in said report. This Order shall be effective July 1, 1985, and shall expire on July 1, 1988 unless renewed by an Executive Order executed prior to that date.

IN WITNESS WHEREOF, I have hereunto
set my hand and caused to be affixed
the Great Seal of the State of Missouri,
in the City of Jefferson, on this
5 day of March, 1985.


GOVERNOR

ATTEST:

SECRETARY OF STATE

Joint Interim Committee
on Head Injury


Report and Recommendations



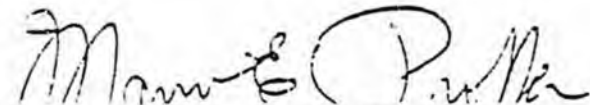
January, 1985

TO THE MEMBERS OF THE EIGHTY-THIRD GENERAL ASSEMBLY:

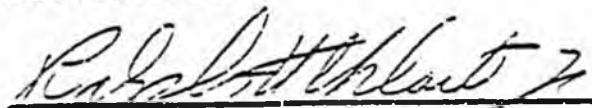
In accordance with responsibilities set out in Senate Concurrent Resolution No. 12 enacted by the 82nd General Assembly, Second Regular Session, 1984, the duly appointed members of the Joint Interim Committee on Head Injuries respectfully submit their report and recommendations.




Senator Edwin L. Dirck, Chairman
District 24



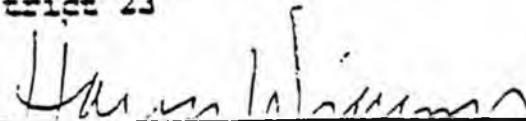
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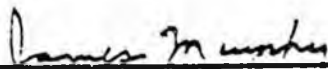
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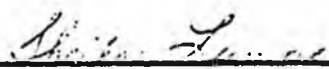
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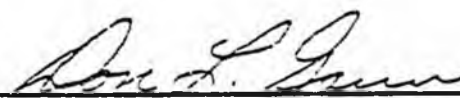
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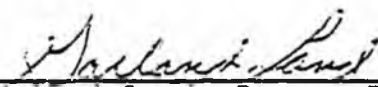
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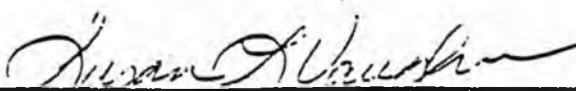
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Recording and Transcribing

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THE JOINT COMMITTEE ON HEAD INJURIES

State legislators formed the Joint Committee on Head Injuries with the passage of Senate Concurrent Resolution No. 12 during the 82nd General Assembly, Second Regular Session, 1984. Citing the need to recognize traumatic brain damage as a distinct category of disability, the resolution directed committee members to study the extent and effects of head injury in Missouri. The resolution further required the committee to meet with interested groups, consider creating or expanding services for head injured persons, and report its recommendations to the 83rd General Assembly.

Chaired by Senator Edwin L. Dirck, the joint committee was composed of five senators, five state representatives, and four officials representing state agencies and services. All were chosen for their knowledge of issues and programs most likely to affect head injured persons. Legislators, for example, contributed their years of experience with state appropriations, public health and welfare, insurance matters, education, and employment practices. Agency officials complemented this experience with their knowledge of rehabilitative, referral, and social service delivery.

Assisted by the National Head Injury Foundation, Missouri Association, the committee held public hearings in five different cities.

August 15	St. Louis - Forest Park Community College
August 17	Cape Girardeau - Southeast Missouri State University
August 22	Kansas City - Children's Mercy Hospital
August 23	Springfield - Southwest Missouri State University
September 4	Columbia - University of Missouri

Of the 91 witnesses who testified to the committee, 42 percent were relatives of head injured persons, 38 percent were medical or other professionals, and 20 percent were head injured individuals.

Problems of the Head Injured

Severe head injury is defined as "serious traumatic injury to the brain requiring extensive services over an extended period of time."¹ Although many injuries occur as results of automobile or industrial accidents, brain damage also can be caused by physical abuse, falls or conditions that deprive the brain of oxygen.

Witnesses testifying before the Joint Interim Committee on Head Injury noted that each incident of brain trauma is unique - severity of injury, cognitive and behavioral problems suffered, and available financial and rehabilitation support vary with each episode. Nevertheless, while individual testimony varied with regard to specific problems, a common theme became evident during the committee's investigation. Those suffering head injuries are not provided with services and programs which would maximize their recovery. In many cases, this lack of services and programs prevents head injured individuals from being reintegrated into the community as productive citizens.

There are several reasons why appropriate programs to maximize recovery are not available for victims of head injuries.

Increased Number of Head Injury Victims

The improved ability of the health care system to treat severe head trauma has contributed to the lack of programs by increasing the number of people needing such programs. Before the mid-1970's, few victims of severe head trauma survived. Since then, an increasing percentage have been kept alive through the use of Level One Trauma Centers equipped and staffed to treat severe neurological damage.² Better understanding of the brain and new medical technology allow physicians to provide better emergency and acute care for victims of brain trauma. Similar advances in the rehabilitation of physical problems caused by brain injury also have increased the number of persons who recover sufficiently to require further long-term rehabilitation and community services. More people, therefore, are being discharged from hospitals and rehabilitation centers into the community.

Limited Availability of Specialized, Long-term Rehabilitation

Acute care and physical rehabilitation for victims of severe head trauma commonly last from three to eight months. Unfortunately, discharge from medical or rehabilitation

facilities does not mean the head injured person is cured. Additional long-term rehabilitation lasting from six months to two years often is required. An important component of such rehabilitation is cognitive retraining, a therapy which involves teaching the uninjured parts of the brain to perform functions formerly performed by the damaged tissue. It is a highly specialized and relatively new form of rehabilitation. Behavioral counseling and modification also may be necessary for the rehabilitation of head injured individuals.

Cognitive retraining is scarce and expensive. According to testimony, few rehabilitation facilities in Missouri offer long-term cognitive and behavioral therapy in conjunction with residential programs. Those facilities which are available generally must discharge their patients before rehabilitation is completed because of inadequate funding by third-party payors or governmental programs. Out-of-state facilities specializing in the treatment of head injuries, according to witnesses' testimony, can cost up to \$5,000 per month. Such treatment is available only to those with extensive insurance coverage.

Existing State Programs are not Adequately Treating the Head Injured

Missouri's Department of Elementary and Secondary Education and Department of Mental Health currently offer the state programs most commonly used by the head injured individual. Three complaints were commonly expressed regarding the services provided by these agencies. First, programs are not designed for the specialized deficiencies of the head injured and, as such, are ineffective in improving those deficiencies. Second, counselors, evaluators, caseworkers and special education teachers do not have appropriate training or knowledge of the problems of head injured individuals. Third, state programs have specific eligibility guidelines which often exclude the head injured person.

For example, a child may be served by the education department's special education section. If a head injured person of school age is able to return to school, he or she often is evaluated by those who are unfamiliar with head trauma using tests designed for persons with mental or behavioral disabilities. As a result, the child may be placed in a special education program even though he or she may have a normal I.Q. The special education classroom, as a rule, is not equipped to provide the kind of rehabilitation needed by the head injured child. Special education services, if received, may continue until age 22.³

A head injured person may qualify for programs for the

developmentally disabled administered by the Department of Mental Health if the injury originated before age 18. In addition, the Department of Elementary and Secondary Education's Division of Vocational Rehabilitation may recommend placing other head injured individuals in sheltered workshops designed for the mentally retarded.

The only state program available for adults suffering injuries is administered by the Division of Vocational Rehabilitation. The division provides training and assistance to the vocationally handicapped who appear to have a good chance of success in learning the skills necessary to hold a job. Training is provided to the level that vocational rehabilitation counselors think is appropriate; therefore, witnesses expressed a need to educate counselors concerning head injury.

In general, state programs are not organized to provide a coherent system of services which ensures that the head injured person receives rehabilitation and training that are both continuous and specialized enough to be effective. Program eligibility guidelines, in fact, often preclude the delivery of needed services.

It is possible, for example, to be too old for special education services; injured too late in life to qualify for developmental disability programs and services; too impaired for vocational rehabilitation; not impaired enough for nursing care; too poor to afford out-of-state rehabilitation; financially ineligible for Medicaid; or have an I.Q. too high to qualify for programs for the mentally retarded. (See Appendix D for eligibility requirements for state programs commonly used by the head injured.)

Lack of awareness of the specialized needs of the head injured is not exclusively a governmental problem. Witnesses described similar shortcomings among some health care professionals and hospitals. They felt that the health care system should transmit information to head injured patients about appropriate community services after discharge from acute care and rehabilitation facilities. Some hospitals and doctors do this already; some do not. Witnesses also expressed a need to discourage hospitals and physicians from discharging head injured patients from acute care facilities to nursing homes without proper evaluative tests.

Lack of Financial Support

Head trauma almost invariably involves huge medical bills. Patients may require many months of acute care and rehabilitation; bills can total hundreds of thousands of

dollars. Witnesses indicated that financial support for head injury victims and for their families is necessary to provide services and help cover expenses.

Current Medicaid policies, witnesses testified, limit the head injured persons's recovery opportunities to those found in acute care settings or in rehabilitation facilities. The program does not reimburse the cost of outpatient speech or occupational therapy, nor (unless a case is exceptional) does it help pay for long-term, specialized rehabilitation in the home. When the injured person does use these services as an inpatient, Medicaid reimbursement normally is not adequate to cover the extensive hospital charges associated with traumatic injury.

Some financial aid is available through Crippled Children's Services, a program administered by the Department of Social Services' Division of Health. Established in 1959, the program helps financially eligible children under age 21 obtain medical, rehabilitative and other services. To qualify, a child must be crippled or suffer from a condition which leads to crippling. These guidelines are broad enough to accommodate head injured children, but program funding is limited.

Recent changes in state policy, however, will make more resources available to disabled children under age 21. Because of a waiver of federal Medicaid rules, Missouri will be able to reimburse the cost of rehabilitative therapies in home as well as in institutional settings. Eligible persons, including those who are head injured, can remain in the program past age 21 as long as they continue to meet income guidelines and if they qualify as permanently and totally disabled.

Witnesses suggested that mandatory automobile liability insurance could create more resources for persons injured by uninsured motorists. But, although helpful, these initiatives can reach only a fraction of Missouri's head injured population.

Effects of the Current Service Delivery System

These are the reasons for the lack of programs and services to maximize recovery - what are the effects? Most head injured Missourians find that after physical rehabilitation has been completed they have only a few options available to them.

First, they can be sent home to live with their families who often must provide full-time care and rehabilitation for them. Testimony indicated that this is a highly stressful situation -- there is little respite for families who must provide such constant care. The head injured victim may want to live away from his or her parents but is unemployable and incapable of independent living.

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- Second, head injured individuals occasionally go into sheltered workshop settings designed for the mentally retarded. This may be inappropriate because severe head trauma does not necessarily impair the victim's I.Q. or his or her ability to remember personal capabilities prior to injury. Thus, head injured persons or their families often resent placement in programs designed for the mentally retarded.

Third, they can enter nursing homes or other residential or long-term care facilities. But appropriate rehabilitation or opportunities for developing socialization or independent living skills may not be available. In geriatric settings, for example, younger head injured persons are likely to suffer psychological and social problems that further complicate their conditions.

Failure to provide services that maximize recovery not only creates personal hardship for head injury victims and their families. The public also assumes a significant financial burden when those affected by head injury lose or have no capacity to regain their former productive capacities.

The head injury victim usually is under age 35. Without opportunities for appropriate rehabilitation therapies, he may be institutionalized in a nursing home or mental health facility for the rest of his productive life. Unless he has adequate insurance coverage or financial resources at his disposal, he must turn to the state or federal government for medical assistance.

Depending upon his level of recovery, a head injured person who can return to work may have to accept less responsibility, work fewer hours and earn less pay than he did before his injury occurred. Even these ventures can fail, however, when recurring cognitive and behavioral problems prevent successful workplace re-entry.

Families who care for head injured relatives in their homes face similar problems. When professional nursing or rehabilitative services are available or unaffordable, many spouses and parents leave their jobs to attend full time to the injured person. Diminishing family resources, in turn, can lead rapidly to a need for medical and other forms of public assistance.

¹Definition from National Institute of Handicapped Research, Office of Special Education and Rehabilitative Services, U. S. Department of Education.

²The Level One Trauma Center is equipped and staffed to provide or gain access to all general and special medical services. It has the capability of managing complicated fractures and head, thoracic, visceral and vascular injuries. Facilities and physicians certified by their respective professional boards are available 24 hours a day. Level One Trauma Centers exist in St. Louis, Kansas City and Columbia. (Source: Missouri Division of Health, Hospital Resources for Optimal Care of the Injured Patient, February 1981.)

³Special education services are available under P.L. 94-142, the federal Education for All Handicapped Children Act of 1975.

Witnesses' Proposals for Change

Witnesses discussed solutions as well as problems during the joint committee's hearings. Suggestions ranged from subtle matters affecting attitudes toward recovery, to comprehensive changes in state rehabilitation programming. Although witnesses described more than forty different needs to committee members, a consistent thread of agreement and acceptance unified testimony gathered at all sessions.

These needs and proposals for change fall into the eight broad categories listed below. Their order, which indicates their priority as generally expressed by witnesses, was measured by the number of times such proposals were mentioned. (See Appendix C.)

Appropriate Placement

Because it is likely to determine a head injured person's potential for recovery, appropriate placement after hospital discharge is critical. Proper testing and evaluation should guide the person to specialized rehabilitation and away from services intended for other groups. This specialized care must include cognitive retraining and help for the memory, speech and behavioral problems common to head injured persons.

A system of therapies, designed to move the head injured person toward his highest level of independence, should be offered in a variety of settings. Acceptable options include: a long-term rehabilitation center suitable for persons leaving hospitals; in-home therapies for those ready to re-enter family settings; day programs for persons preparing to enter vocational rehabilitation; and transitional living arrangements suitable both for those needing continued guidance and for others preparing for full independence.

The state could test systematic therapies by establishing a pilot project at the University of Missouri's Rusk Rehabilitation Center in Columbia. By cooperating with affiliated medical and mental health care institutions, Rusk could manage treatment, rehabilitation and counseling for head injured persons and their families. Successful tests could lead to permanent state plans and support.

Government Response to Head Injury

Missouri can improve its public response by distinguishing head injury from other behavioral, mental and developmental disabilities and by adjusting existing services to meet different needs. Specially designated officials, either at a

central entry point or in each agency likely to serve the head injured, could guide persons to appropriate programs and monitor the quality of their progress. A designee within the Department of Elementary and Secondary Education, for example, could assure that vocational rehabilitation counselors recognize the characteristics of head injury; help administrators adjust therapies; place persons in available slots; and counsel families during the rehabilitation period.

The state must do more to finance the care of head injured persons and make resources available to more families. To promote consistent eligibility for government assistance, Missouri should adopt a clear, legal definition of "brain damage secondary to head injury" for use by all appropriate state agencies. Medicaid administrators should raise reimbursement rates, extend coverage for long-term therapies and expand the program to include payment for cognitive, psychosocial and life-skill retraining.

Legislators should support converting the Missouri State Chest Hospital to a state rehabilitation center. Located in Mt. Vernon, the facility is a well-maintained but under-used resource that already serves patients with chronic conditions. Adequately staffed and organized, the hospital could serve Missourians and other head injured persons from bordering states.

Prevention

The state can limit the need for costly services by emphasizing the prevention of head injury. Since most traumatic brain damage occurs as a result of automobile accidents, Missouri should enact mandatory seat belt laws for all citizens and should vigorously enforce existing child restraint laws.

State officials also should make persons aware of the effects of head injury through continuing public information campaigns. The Division of Health, which already reaches some school age children with its spinal and head injury presentations, should attempt to reach all school districts. The Department of Mental Health, in addition, should address head injury in its alcohol and drug abuse prevention programs.

Others who can ease the effects of head injury include child abuse and neglect administrators and juvenile court officials. Caseworkers and other evaluators must recognize the signs of head injury, monitor the pattern of this abuse and document its persistence. Court officials must assure that children are not left in environments where head injury can occur.

Information and Education

Services for the head injured suffer because Missouri lacks a base of accurate, epidemiologic data. To increase knowledge of the extent of head injury in this state, the legislature should enact a mandatory disability reporting system based on the International Classification of Diseases (ICD).

The state must assure that medical professionals, public administrators and educators recognize head injury and appreciate the unusual problems it poses. College curricula should include training in the specialized needs of the head injured. Agencies should train their counselors and caseworkers to administer appropriate tests, to assess neuropsychological evaluations and to be aware of neurobehavioral abnormalities. Special educators should know how to teach injured adults and should be trained in the methods of cognitive rehabilitation.

Proper training of medical professionals will guarantee better recovery potential for many head injured persons. Missouri should fund initiatives that help doctors recognize and refer head injuries to appropriate specialists and that train specialists in methods promoting improved, consistent rehabilitation and recovery.

Support Services

There must be help for those who deal each day with the pressures of recovery from head injury. Rehabilitation for the injured person should include association with and support from others who have similar needs. Services such as subsidized transportation, educational tutoring and loan libraries of communication devices can help restore lost independence.

Families, economically and socially disrupted, need thoughtful counseling during all phases of their loved one's recovery. Adequate referral networks should guide them to assistance. Services such as temporary respite care and temporary family housing during long rehabilitative stays can ease some burdens.

Insurance Practices

Although some insurance plans can accommodate the expense of head injury treatment and recovery, many policies lack flexible coverage. Legislators should require third party payors to offer coverage for cognitive retraining and other practices and devices used to rehabilitate injured persons. Coverage should be available in outpatient settings and at levels that reflect today's health care costs.

Research and Treatment

Because early intervention is so critical to recovery, Missouri should see that Level One trauma centers are available in all areas of the state. More resources must be diverted to specialized acute care and to research that focuses on improved rehabilitation methods. The legislature should consider requiring appropriate and speedy patient referrals to head injury specialists.

Personal Rights

Even during recovery, head injured persons remain vulnerable to abuse of their rights. The state should require that an insurance settlement resulting from an injury claim be used only for the benefit of the injured person. He should be protected from discrimination in employment on the basis of physical or emotional disability. If under guardianship, the person's status should be reviewed regularly as his rehabilitative progress continues.

At times, however, the injured person's rights may affect the health and safety of others. For this reason, anyone known to have suffered severe head trauma should reapply for his vehicle operator's license and be tested for perceptual ability.

Committee Recommendations

The problems of the head injured are so diverse, and the array of proposed solutions so broad, that it is difficult to design a comprehensive legislative package at this time. In fact, some ideas need thorough fiscal and technical analysis before statutory or regulatory changes can be considered.

It is possible, however, to address some broad goals now because appropriate mechanisms are in place, because timing is favorable or because these initiatives would require relatively little new money. The Joint Committee on Head Injury, therefore, proposes actions that:

- 1) Initiate or expand efforts to prevent head injury;
- 2) Establish a framework for comprehensive, sequential head injury rehabilitation; and
- 3) Assure access to continuing, informed advice on matters affecting Missouri's head injured population.

Head Injury Prevention

Preventive measures are, literally, the best medicine for easing the suffering caused by head injury. Equipped with knowledge and encouraged to adopt prudent habits, Missourians actually can lower their chances of sustaining serious head or brain damage. For each incident that does not occur, one more family can avoid the staggering personal and economic loss associated with head injury.

Recommendation No. 1: The General Assembly should enact legislation requiring persons to use safety belts when they operate or ride in passenger cars on Missouri roads.

Of the disabling injuries that occur as a result of auto accidents each year, it is estimated that one third involve damage to the head or brain. In fact, in the United States, injury sustained in auto accidents is the leading cause of epilepsy. Research has shown, however, that safety belt use can cut the number of serious injuries by 50 percent and can lower fatalities by 60 to 70 percent.

These effective preventive tools are widely available and cost-efficient. All cars manufactured since 1964 are equipped with some sort of safety restraint device - either a lap belt or, if built after 1968, a shoulder harness. It costs the driver and passengers nothing to use their safety belts.

Recommendation No. 2: Missouri should continue to support existing educational programs designed to prevent disabling injuries.

Missouri's Spinal Cord and Head Injury Prevention Project attempts to lower the incidence of disabling trauma. Because these injuries are most likely to occur as results of auto accidents involving teenagers and young adults, state health educators reach their audience by visiting junior high and high schools.

Since the project started in 1980, the consequences of serious injury have been described to 31,150 teenagers, in 60 schools, in 35 counties. Missouri should maintain or increase its current level of support to fulfill all requests for program presentations and to reach all members of the target group every three years.

Comprehensive Rehabilitation

Although preventive practices can reduce their frequency, head injuries will continue to disable some Missourians each year. It is necessary, therefore, to maintain rehabilitation opportunities suited to all levels of patient recovery. Missouri should establish a sequence of pilot projects, in a variety of settings, that are designed to move the head injured person toward his highest level of independence. Successful programs, in turn, can be adopted by public and private service providers in other locations.

Recommendation No. 3: Using the facilities and professional resources available at the University of Missouri-Columbia Hospital and Clinics, the state should support a pilot program of systematic, short-term rehabilitation for head injured persons.

It is proven that early, skilled, professional intervention lays a foundation for recovery of the seriously head injured person. Because this trauma is so debilitating, the individual needs access to cognitive, retraining and other specialized therapies to regain his most basic skills. This rehabilitation must begin upon hospital discharge and continue until the injured person is prepared to function in other settings.

Rusk Rehabilitation Center, part of the University of Missouri-Columbia medical complex, has the staff and experience needed to study short-term intervention technologies. The center now serves head injured persons whose average length of stay is 60 days. Because this group is in place, Rusk can

quickly develop systematic methods for assessing patient and family needs, testing therapy options, monitoring patient progress and counseling after discharge. The project should produce a model for serving patients and families during the crucial, early rehabilitation period.

Recommendation No. 4: The General Assembly should enact legislation that converts the Missouri State Chest Hospital into the Missouri Rehabilitation Center, a facility that will be able to provide transitional rehabilitation in a simulated work and home environment.

Many persons who complete initial periods of rehabilitation need more help before they can consider living independently. During this transition from facility to community, an individual might re-learn self-care and homemaking skills, adjust behavior problems that could prevent employment or continue other specialized therapies. Although a period of transitional living greatly improves an injured person's ability to resume independence, this recovery option is not available in Missouri.

The Missouri State Chest Hospital, if converted to a rehabilitation center, could fill this service deficiency. Located in Mt. Vernon, the complex includes a dormitory, single residential units and other buildings which can be used to simulate work and home environments. The hospital is equipped to provide medical care, rehabilitation therapies and other patient services. Professional staff is available on site or can be drawn from larger labor pools in nearby Springfield or Joplin. A 20-bed pilot project should be established now and subsequently evaluated for further expansion.

Recommendation No. 5: To allow head injured persons to resume independent living in their communities, Missouri should contract for locally-based transitional services.

Although not based in a facility, transitional rehabilitation opportunities in other settings may be available in a community and its surrounding area. Often, however, head injured persons and their families simply do not know where to find help. A community transitional living center, staffed by persons familiar with local resources, could direct clients to appropriate services. To avoid duplicating existing public and private efforts, the center would arrange these services through local provider contracts.

Columbia, Missouri is an appropriate trial ground for a community-based pilot project. The transitional center could help persons discharged from the Rusk facility and other local hospitals implement individual rehabilitation plans. Center

staff, in addition, would attempt to manage physical, social, vocational and other therapies for the client's overall benefit. Local contractual arrangements, similar to those used by other state agencies, could result in small group residential programs or in services at patient homes, at provider locations or in day care settings.

Continuing Advice

Recommendation No. 6: To assure that Missouri continues to address the needs of its head injured citizens, the Governor should establish, by Executive Order, a Head Injury Advisory Council.

Because there is no statutory mandate on their behalf, Missouri's head injured have no true advocates. The General Assembly has provided a forum for discussion, but others with more knowledge and experience must transform discussion into action. By forming a Head Injury Advisory Council, the Governor can encourage these actions and guarantee the head injured the same protection now enjoyed by other Missourians.

The council should be composed of 25 voting members representing both public and private interests. A designee from the Office of Administration could participate as a non-voting member. All members could serve until they resign or until they lose the positions that qualify them for participation.

The Governor should appoint 15 members - five panels of three appointees - drawn from the St. Louis, Kansas City, southwest, southeast and central Missouri areas. Each panel would include persons representing the head injured, family members and professionals in the field.

The council also should include one member from each of the following entities: the Senate; the House of Representatives; the Department of Mental Health; the Division of Health; the Division of Family Services-Medical Services section; the Division of Vocational Rehabilitation; the Division of Insurance; the Missouri Protection and Advocacy Council; the Governor's Committee on the Employment of the Handicapped; and the National Head Injury Foundation-Missouri Association. These persons would be selected by the bodies they represent.

As a working group, the council will initiate studies on specific proposals related to head injury. Members can be expected to thoroughly analyze advantages, disadvantages and costs related to each proposal and to seek executive and legislative support for the best ones.

The council will study and recommend action on the following items and on others it may later select.

1. Methods for identifying the extent of head injury in Missouri.
2. A statutory definition of "head injury".
3. Appropriate entry points for head injured persons seeking services from state agencies.
4. Rehabilitative placement opportunities which can be provided with public or private resources.
5. Methods for establishing and funding transitional living centers for the head injured.
6. Methods for advancing the practice and availability of cognitive retraining therapies.
7. Improved coverage by all third party payers for treatment and rehabilitation in institutional, in home and in other settings.
8. Protection of the personal and civil rights of head injured persons.
9. Head injury preventive education.
10. Opportunities for obtaining federal funds through the National Institute of Health Research (NIHR).

The full council should meet quarterly. Members should serve without pay but be reimbursed for costs they incur while conducting council business. To maintain accountability, the council should report annually to the Governor.

Appendix A

Senate Concurrent Resolution No. 12

WHEREAS, in the State of Missouri there are an estimated 10,000 head injuries annually which physically disable and intellectually impair some of our citizens for a lifetime; and

WHEREAS, in addition to those injuries, many of which produce physical, intellectual and emotional disabilities, more than 700 persons each year will die as a result of head injuries; and

WHEREAS, head injury is the major cause of death and disability among Missourians under the age of 35; and

WHEREAS, those figures clearly reflect a problem now recognized as the "Silent Epidemic"; and

WHEREAS, the state, federal and local government agencies, while providing services technically available to head injured persons, may not be meeting the needs of those so injured in even a minimal way because available service systems were designed for other types of disability and are inappropriate for head injury rehabilitation and care; and

WHEREAS, many head injured persons in Missouri are inappropriately placed in mental institutions, schools for the retarded, nursing homes or other programs or facilities that cannot provide the services needed for adequate rehabilitation achievement; and

WHEREAS, many head injury treatment programs are unnecessarily expensive and might be structured to provide better treatment at far less cost; and

WHEREAS, no statewide system exists to assist head injured persons in making the transition from dependent to independent living; and

WHEREAS, there is a need to recognize traumatic brain damage due to head injury, disease and anoxia as a separate and distinct category of disability;

NOW, THEREFORE, BE IT RESOLVED by the Senate, the House of Representatives concurring therein, that a joint interim committee be established to study and consider head injuries; and

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BE IT FURTHER RESOLVED that the committee be composed of ten legislative members, five of whom shall be appointed by the President Pro Tempore of the Senate, five of whom shall be appointed by the Speaker of the House, and the Commissioner of Education or his designee, the Director of the Department of Mental Health or his designee, the Director of the Department of Social Services or his designee, and a member of the Missouri Protection and Advocacy Council; and

BE IT FURTHER RESOLVED that this committee be authorized to meet and act during the interim, to study the economic impact and emotional hardship of head injuries to the citizens of this state in order to carefully consider the need for additional or expanded programs to provide care and rehabilitation for those suffering from head injuries and for the families of such persons, to the end that all may be returned to useful and productive lives for the good of our state and nation; and

BE IT FURTHER RESOLVED that this committee be encouraged to meet and confer with groups interested in this activity, and/or to establish advisory groups who will gather and present materials to be considered by the committee; and

BE IT FURTHER RESOLVED that the committee be directed to prepare a report, to be submitted to the Eighty-third General Assembly, with recommendations for needed legislation or appropriations to assist with the treatment of head injured persons; and

BE IT FURTHER RESOLVED that the Senate members be reimbursed for their actual and necessary expenses incurred in the performance of their duty from the Senate Contingent Fund, that House members be reimbursed from the House Contingent Fund, and that the state officials be reimbursed from their respective offices; and

BE IT FURTHER RESOLVED that the committee be authorized to seek clerical, technical and bill drafting assistance from the Senate Research office, the House Research office, the Committee on Fiscal Affairs, or the Committee on Legislative Research.

Appendix B

Joint Committee on Head Injury

Witness Groups by Hearing Location*

- Witness Groups

City	Professionals	Head Injured Persons	Relatives	Total Witnesses
St. Louis	5	4	14	23
Cape Girardeau	3	2	2	7
Kansas City	5	3	13	21
Springfield	6	6	3	15
Columbia	16	3	6	25
Total	35 (38%)	18 (20%)	38 (42%)	91 (100%)

*Includes only persons who attended hearings, who identified themselves as witnesses, and who spoke to the committee.

Appendix C

Joint Committee on Head Injury

Proposals for Change - Number of Times Mentioned by Witness Group

Proposal Category	Witness Group			Total Times Mentioned
	Professionals	Head Injured Persons	Relatives	
<u>Appropriate Placement</u>	31	1	- 30	62
<u>Government Response</u>	12	4	30	46
<u>Prevention</u>	18	2	5	27
Education and Information	8	1	12	21
Support Services	11	4	5	20
Insurance Practices	6	3	9	18
Research and Treatment	11	1	6	18
Personal Rights	1	3	1	5
No Specific Recommendations	6	7	5	18

Appendix D

State Programs Commonly Used by the Head Injured:
Eligibility Requirements and Statutory Definitions

Department of Elementary and Secondary Education

Division of Vocational Rehabilitation

- A. Must have a disability
- B. Disability must be a handicap to employment
- C. There must be a reasonable expectation that services provided will lead to permanent employment

Division of Special Education

Must meet specific eligibility criteria in at least one of the following areas

- (a) Learning disabled
- (b) Behaviorally disordered/emotionally disturbed
- (c) Mentally retarded
- (d) Physically impaired
- (e) Other health impaired
- (f) Visually impaired
- (g) Hearing impaired
- (h) Deaf/blind
- (i) Autistic

Definition of "handicapped" relating to sheltered workshops (§178.900, RSMo 1978)

Handicapped person: a lower range educable or upper range trainable mentally retarded or other handicapped person sixteen years of age or over who has had school training and has a productive work capacity in a sheltered environment adapted to the abilities of the mentally retarded but whose limited capabilities make him nonemployable in competitive business and industry and unsuited for vocational rehabilitation training.

Department of Mental Health

Definition of "developmental disability" (§630.005, RSMo Supp. 1983)

A disability:

- (a) Which is attributable to mental retardation, cerebral palsy, autism, epilepsy, a learning disability related to a brain dysfunction or a similar condition or conditions found by comprehensive evaluation to be closely related to such conditions or to require habilitation similar to that required for mentally retarded persons;
- (b) Which originated before age eighteen; and
- (c) Which can be expected to continue indefinitely.

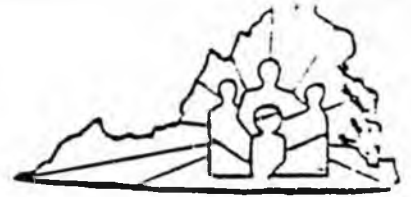
Definition of "mental retardation" (§630.005, RSMo Supp. 1983)

Significantly subaverage general intellectual functioning (I.Q. less than 69) which:
(a) originates before age eighteen;
(b) is associated with a significant impairment in adaptive behavior.

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FOR IMMEDIATE RELEASE

March 12, 1984

Governor Charles S. Roob signed into law the Head Injury Registry Bill on March 7, 1984. The bill was introduced by Senator Clive DuVal, (D) 32nd District and passed the Senate unanimously. Delegate Mary Marshall, (D) 48th District (Arlington) handled the bill in the House of Delegates, where it passed 95-1. Virginia Head Injury Foundation (VHIF), its members state-wide, and the Department of Rehabilitative Services (DRS) vigorously supported the bill.

The legislation will establish and maintain a Central Registry, through the Department of Rehabilitative Services, of persons who sustain Head Injuries. It is the first law of its kind to be enacted in the United States. The bill was patterned after the Virginia Spinal Cord Registry Law. Under this new law, effective July 1, every hospital and

Under this new law, effective July 1, 1984, every hospital and attending physician is required to report to the Commissioner by the most expeditious means within 7 days after the identification of any persons sustaining a head injury. The objectives of the legislation are "to facilitate the provision of appropriate Rehabilitative Services by the Department and other state agencies to such persons."

"I appreciate the efforts of the VHIF and the Department in the assisting in the passage of this measure. Virginia can truly be proud of its leadership in recognizing the needs of its head injured population", says Senator Clive DuVal.

(more)

According to VHIF, this is the first step toward assessing the needs of Head Injured persons in the Commonwealth of Virginia. "We are proud that the Commonwealth of Virginia is the first state to enact such legislation. In the long run, proper rehabilitation programs at the outset will save the Virginia taxpayers hundreds of thousands of dollars" states Alice Demichelis, State Vice-President of Virginia Head Injury Foundation.

Wayne M. Alves, Ph.D., Director of Clinical Research, Head Trauma Center, Department of Neurosurgery, University of Virginia School of Medicine stated that "an aggressive, early effort to rehabilitate the brain injured seems to promise the greatest chance for restoring social competence and allowing head injured persons to resume a useful and productive life."

Virginia Head Injury Foundation is a non-profit organization, assisting head injured persons and their families adjust to the changes in their lives brought about by head injury. The chapters are located in the following locations: Northern Virginia, Richmond Area, Central Virginia, Southwest Virginia, Tidewater Area, and Virginia Beach Area.

Diane Huddle, M.A., LPC, Executive Director of VHIF, said, "on behalf of all head injured and their family members, we express our heartfelt gratitude to all the members of the Virginia General Assembly, DRS Commissioner Altamont Dickerson, and George Meeks, Director of DRS's Legal Legislative and Consumer Affairs section. We also express special gratitude to the Honorable Joseph L. Fisher, Secretary of Human Resources. Establishment of a central registry is a major accomplishment for VHIF. We are now producing the nation's first film, expected to be released in April, about the head injured, stressing the importance of prevention and early intervention. The film will reach one-million Virginians before being distributed nationally.

VIRGINIA HEAD INJURY REGISTRY BILL

The Virginia Department of Rehabilitation has prepared a bill to be introduced in the Virginia 1984 legislative session which will establish a state-wide register of head injured persons. The bill is patterned after the Spinal Cord Injury Registry currently in effect. The Virginia Head Injury Foundation supports this bill. Enactment of the Head Injury Registry Bill will assist the Virginia Department of Rehabilitative Services in developing appropriate programs and facilities for head injured persons. In the long run, proper rehabilitation programs at the outset will save the Virginia taxpayers hundreds of thousands of dollars. According to a noted authority, Wayne M. Alves, Ph.d., Director of Clinical Research, Head Trauma Center, Department of Neurosurgery, University of Virginia School of Medicine, "an aggressive, early effort to rehabilitate the brain injured seems to promise the greatest chance for restoring social competence and allowing head injured persons to resume a useful and productive life."

Head injury, primarily caused by automobile accidents, has reached epidemic proportions and is a major health problem. A recent survey, about to be released by the Virginia Head Injury Foundation, has revealed that in 1982 alone, 13,000 people in Virginia sustained a head injury. These staggering figures were obtained from hospital reports throughout the state.

At the present time, Virginia lacks the needed facilities for proper rehabilitation of head injured persons. Once he/she reaches medical and physical stability, acute rehabilitation facilities are often forced to discharge them long before they are capable of resuming a useful and productive life. The head injured individual and his/her family have nowhere to turn for help.

Although Virginia does have a small program at Woodrow Wilson Rehabilitation Center in Stanton, the nearest rehabilitation centers for the head injured persons are in Pennsylvania and Connecticut. Many Virginia families must travel out of state to receive necessary services, if they can locate appropriate services at all.

Six chapters of VHIF are located throughout the state. We are less than a year old and are now directly serving hundreds of Virginia families. We were most fortunate to receive a grant from the Department of Rehabilitation Services to conduct the survey which identified those 13,000 who

were head injured in 1982. This Bill will establish a register on a permanent basis which will identify for the Department of Rehabilitation, the persons in need of rehabilitative programs on the same basis as persons with spinal cord injuries.

On behalf of the thousands of head injured persons and their families, VHIF is asking for your support of the Head Injury Registry Bill.

LD0240305

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SENATE BILL NO. 142
Offered January 17, 1984

A BILL to amend and reenact § 2.1-583 of the Code of Virginia, relating to a central registry of persons sustaining head injuries.

Patrons—DuVal, Waddell, Saslaw, Gartlan, Colgan, Holland, E. M., and Russell, J. W.;
Delegates: Stambaugh, Cohen, Almand, Plum, Diamonstein, McDiarmid, Cody, Callahan,
Medico, Cunningham, Keating, and Gordy

Referred to the Committee on General Laws

Be it enacted by the General Assembly of Virginia:

1. That § 2.1-583 of the Code of Virginia is amended and reenacted as follows:

§ 2.1-583. Central registry.— A. The Commissioner shall establish and maintain a central registry of persons who sustain spinal cord injury other than through disease, whether or not permanent disability results, in order to facilitate the provision of appropriate rehabilitative services by the Department and other state agencies to such persons.

Every hospital and attending physician shall report to the Commissioner by the most expeditious means within seven days after identification of any person sustaining such an injury. The report shall contain the name, age and residence of the person, date and cause of the injury, and such additional information as the Commissioner may deem necessary.

B. The Commissioner shall establish and maintain a central registry of persons who sustain head injuries, if permanent disability is likely to result. Reporting requirements shall be consistent with those set out in paragraph A of this section.

Official Use By Clerks	
Passed By The Senate	Passed By The House of Delegates
without amendment <input type="checkbox"/>	without amendment <input type="checkbox"/>
with amendment <input type="checkbox"/>	with amendment <input type="checkbox"/>
substitute <input type="checkbox"/>	substitute <input type="checkbox"/>
substitute w/amdt <input type="checkbox"/>	substitute w/amdt <input type="checkbox"/>
Date: _____	Date: _____
_____ Clerk of the Senate	_____ Clerk of the House of Delegates

Draft

COMMONWEALTH OF VIRGINIA
 Department of Rehabilitative Services
 Combined Head Injury/Spinal Cord Injury Central Registry
 Section 2.1-583, Code of Virginia, requires that injury be reported
 within seven days after hospitalization

PATIENT'S NAME _____ BIRTH DATE _____
last, first middle

SOCIAL SECURITY NUMBER _____

STREET _____ CITY _____ STATE _____

COUNTY _____ ZIP CODE _____

SUPPORTIVE CONTACT (FAMILY/FRIEND) _____
(relationship)

MAILING ADDRESS _____

TELEPHONE # _____

PLEASE CIRCLE OR FILL IN THE APPROPRIATE ITEMS BELOW:

STATUS: LIVING DECEASED (IF SO, DATE _____)

SEX: MALE FEMALE VETERAN: YES NO UNKNOWN

CAUSE: MOTOR VEHICLE DIVING GUNSHOT FALLS ASSAULT OTHER _____
(please specify)

DATE OF INJURY: _____ DATE OF ADMISSION _____

ATTENDING PHYSICIAN _____ TELEPHONE # _____

Head Injury

Report only on these ICD-9-CM Codes.
 (Circle)

800 - Fracture of vault of skull
 801 - Fracture of base of skull
 802 - Fracture of face bones
 803 - Other and unqualified skull fractures
 804 - Multiple fractures of skull and face
 850 - Concussion
 851 - Cerebral laceration and contusion
 854 - Intracranial injury of other and unspecified nature, such as closed head injury

Spinal Cord Injury

ICD-9-CM Code (Circle)

344.0 - Quadraplegia
 344.1 - Paraplegia

Person Supplying Information

Return to:
 Spinal Cord/Head Injury
 Central Registry
 P. O. Box 11045
 Richmond, VA 23220

Hospital Name _____

Address _____

Date Form Completed _____

AMENDED IN SENATE JUNE 29, 1984

AMENDED IN ASSEMBLY MAY 1, 1984

AMENDED IN ASSEMBLY MARCH 20, 1984

CALIFORNIA LEGISLATURE—1983-84 REGULAR SESSION

ASSEMBLY BILL No. 2913

Introduced by Assembly Members Agnos, Alatorre, Bates, Bronzan, Willie Brown, Chacon, Farr, Felando, Filante, Hannigan, Hauser, Isenberg, Klehs, Margolin, O'Connell, Papan, Maxine Waters, and Norman Waters

(Principal coauthor: Assembly Member Connelly)

(Coauthors: Senators Garamendi, Keene, Lockyer, Marks, McCorquodale, Petris, and Rosenthal; Rosenthal, and Torres)

February 13, 1984

An act to repeal and add Chapter 4 (commencing with Section 4330) of Part 2 of Division 4 of the Welfare and Institutions Code, relating to mental health, making an appropriation therefor, and declaring the urgency thereof, to take effect immediately.

LEGISLATIVE COUNSEL'S DIGEST

AB 2913, as amended, Agnos. Mental health.

Under existing law, the Director of Mental Health is required to establish a pilot project for brain-damaged persons for one year to be conducted by contract with an appropriate nonprofit community agency.

This bill instead would require the director to contract with a nonprofit community agency meeting certain requirements to act as the Statewide Coordinating Agency Resources Consultant and to also contract with nonprofit community resource agencies to establish not more than 10

geographically regionally based regional resource nonprofit community agencies centers to provide specified services to brain-impaired adults.

This bill would appropriate \$1,700,000 for the purpose of the bill.

This bill would take effect immediately as an urgency statute.

Vote: $\frac{2}{3}$. Appropriation: yes. Fiscal committee: yes. State-mandated local program: no.

The people of the State of California do enact as follows:

1 SECTION 1. Chapter 4 (commencing with Section
2 4330) of Part 2 of Division 4 of the Welfare and
3 Institutions Code is repealed.

4 SEC. 2. Chapter 4 (commencing with Section 4330) is
5 added to Part 2 of Division 4 of the Welfare and
6 Institutions Code, to read:

7
8 CHAPTER 4. SERVICES FOR PERSONS WITH BRAIN
9 DAMAGE OR DEGENERATIVE BRAIN DISEASE

10
11 4330. The Legislature finds all of the following:

12 (a) That state public policy discriminates against
13 adults with brain damage or degenerative brain disease,
14 such as Alzheimer's disease, hereinafter called "brain
15 impairments."

16 (b) That the Legislature has declared state public
17 policy and accepted responsibility to ensure that persons
18 under the age of 18 years who are "developmentally
19 disabled" pursuant to Division 4.5 (commencing with
20 Section 4500), receive services necessary to meet their
21 needs, which are often similar to those of persons who
22 suffer from brain impairments.

23 (c) That persons over the age of 18 who sustain brain
24 impairment have a variety of program and service needs
25 for which there is no clearly defined, ultimate
26 responsibility vested in any single state agency and for
27 which there are currently a number of different
28 programs attempting to meet their needs.

1 (d) That the lack of clearly defined, ultimate
2 responsibility has resulted in severe financial liability and
3 physical and mental strain on brain-impaired persons,
4 their families, and caregivers.

5 (e) That terminology and nomenclature used to
6 describe brain impairments are varied and confusing, in
7 part because of different medical diagnoses and
8 professional opinions, as well as differences in
9 terminology used by the various funding sources for
10 programs and services. Uniformity is required in order to
11 ensure that appropriate programs and services are
12 available throughout the state to serve these persons.

13 (f) That the term "brain damage" covers a wide
14 range of organic and neurological disorders, and that
15 these disorders, as identified below, are not necessarily to
16 be construed as mental illnesses. These disorders include,
17 but are not limited to, all of the following:

18 (1) Progressive, degenerative, and dementing
19 illnesses including, but not limited to, presenile and
20 senile dementias, Alzheimer's disease, multi-infarct
21 disease, Pick's disease, and Kreutzfeldt-Jakob's disease.

22 (2) Degenerative diseases of the central nervous
23 system that can lead to dementia or severe brain
24 impairment, including, but not limited to, epilepsy,
25 multiple sclerosis, Parkinson's disease, amyotrophic
26 lateral sclerosis (ALS), and hereditary diseases such as
27 Huntington's disease.

28 (3) Permanent damage caused by cerebrovascular
29 accidents more commonly referred to as "strokes,"
30 including, but not limited to, cerebral hemorrhage,
31 aneurysm, and embolism.

32 (4) Post-traumatic, post-anoxic, and post-infectious
33 damage caused by incidents, including, but not limited
34 to, coma, accidental skull and closed head injuries, loss of
35 oxygen (anoxia), and infections such as encephalitis,
36 herpes simplex, and tuberculosis.

37 (5) Permanent brain damage or temporary or
38 progressive dementia as a result of tumors (neoplasms),
39 hydrocephalus, abscesses, seizures, substance toxicity and
40 other disorders.

1 (g) That brain damage frequently results in functional
2 impairments that adversely affect personality, behavior,
3 and ability to perform daily activities. These impairments
4 cause dependency on others for care and
5 decisionmaking. The manifestations of brain damage
6 include impairments of memory, cognitive ability,
7 orientation, judgment, emotional response, and social
8 inhibition. Brain damage can strike anyone regardless of
9 age, race, sex, occupation, or economic status.

10 (h) That Family Survival Project for Brain-Damaged
11 Adults of San Francisco, a three-year pilot project
12 established pursuant to former Chapter 4 (commencing
13 with Section 4330), has demonstrated that the most
14 successful, cost-effective service model is one which
15 allows a nonprofit community agency to provide a full
16 array of support services to families that have a member
17 who suffers from a brain impairment. This agency
18 provides direct services, coordinates existing resources,
19 and assists in the development of new programs and
20 services on a regional basis.

21 ~~(g)~~
22 (i) That respite care services provide a combination
23 of time-limited, in-home, and out-of-home services which
24 significantly decrease the stress of family members and
25 increase their ability to maintain a brain-impaired person
26 at home at less cost than other alternatives. This ability is
27 further increased when complemented by case planning,
28 care training, and other support services for family
29 members.

30 ~~(h) That providing services to brain-impaired adults,~~
31 ~~their families, and caregivers requires the coordinated~~
32 ~~services of many state departments and community~~
33 ~~agencies to ensure that no gaps occur in communication;~~
34 ~~in the availability of programs; or in the provision of~~
35 ~~services.~~

36 ~~(i) That, since 1977, the department~~

37 (j) That, since 1977, the State Department of Mental
38 Health has attempted to identify service gaps and
39 determine a cost-effective, feasible approach to funding
40 and providing services to brain damaged adults, their

1 families, and caregivers. That department has the
2 experience of offering more in the continuum of
3 programs and services than any other state agency and is
4 willing to continue in the lead state agency capacity.

5 (k) That providing services to brain-impaired adults,
6 and to their families and caregivers, requires the
7 coordinated services of many state departments and
8 community agencies to ensure that no gaps occur in
9 communication, in the availability of programs, or in the
10 provision of services. Although the services may include
11 mental health interventions, they cannot be met solely by
12 services of the State Department of Mental Health.

13 4331. As used in this chapter:

14 (a) "Brain damage," "degenerative brain diseases,"
15 and "brain impairment" means significant destruction of
16 brain tissue with resultant loss of brain function.
17 Examples of causes of the impairments are degenerative
18 dementias; cerebrovascular disease and stroke;
19 degenerative diseases of the nervous system; traumatic
20 brain injury; lesions and tumors; anoxia; and infectious
21 disease. Alzheimer's disease, stroke, traumatic brain
22 injury, and other impairments described in subdivision
23 (f) of Section 4330.

24 (b) "Brain-impaired adult" means a person whose
25 brain impairment has occurred after the age of 18.

26 (c) "Respite care" means time-limited substitute care
27 or supervision in support of the caregiver for the
28 purposes of providing relief from the stresses of constant
29 care provision and so as to enable the caregiver to pursue
30 a normal routine and responsibilities. Respite care may
31 be provided in the home or in an out-of-home setting,
32 such as day care centers or short-term placements in
33 inpatient facilities.

34 4332. The director shall administer this chapter and
35 establish standards and procedures, as the director deems
36 necessary in carrying out the provisions of this chapter.
37 The standards and procedures are not required to be
38 adopted as regulations pursuant to the Administrative
39 Procedure Act (Chapter 3.5 (commencing with Section
40 11340) of Part 1 of Division 3 of Title 2 of the Government

1 Code).

2 4333. The director shall do both of the following:

3 (a) Contract with a nonprofit community agency
4 meeting the requirements of this chapter to act as the
5 Statewide Coordinating Agency.

6 ~~(b) With the advice of the Statewide Coordinating
7 Agency and within four years from the effective date of
8 this chapter, contract with no more than 10 nonprofit
9 community agencies to establish geographically based
10 regional resource agencies in order to ensure the
11 existence of an array of appropriate programs and
12 services for brain-impaired adults. The regional resource
13 agencies shall place a high priority on utilizing Statewide
14 Resources Consultant, to be selected through a bid
15 procedure.~~

16 ~~(b) With the advice of the Statewide Resources
17 Consultant and within four years from the effective date
18 of this chapter, contract with nonprofit community
19 resource agencies, selected in a manner determined by
20 the director, to establish regionally-based resource
21 centers in order to ensure the existence of an array of
22 appropriate programs and services for brain-impaired
23 adults. The resource center shall place a high priority on
24 utilizing community resources in creating opportunities
25 for families to maintain a brain-impaired adult at home
26 when possible and in other community-based
27 alternatives when necessary.~~

28 4334. The Statewide Coordinating Agency Resources
29 Consultant shall do all of the following:

30 (a) Serve as the centralized information and technical
31 assistance clearinghouse for brain-impaired adults, their
32 families, caregivers, and service professionals service
33 professionals and agencies, and volunteer organizations.

34 (b) *Work closely and coordinate with organizations
35 serving brain-impaired adults, their families, and
36 caregivers in order to ensure, consistent with
37 requirements for quality of services as may be established
38 by the director, that the greatest number of persons are
39 served and that the optimal number of organizations
40 participate.*

1 (c) Develop training packages which are appropriate
2 for a variety of persons, including, but not limited to, all
3 of the following:

4 (1) Families.

5 (2) Caregivers and service professionals involved with
6 brain-impaired adults.

7 (3) Advocacy and self-help family and caregiver
8 support organizations.

9 (4) Educational institutions.

10 ~~(e)~~

11 (d) Provide service and program development
12 consultation to regional resource agencies resource
13 centers and to identify funding sources which are
14 available.

15 ~~(d)~~

16 (e) Assist the appropriate state agencies in identifying
17 and securing increased federal financial participation and
18 third party reimbursement, including, but not limited to,
19 Title XVIII (42 U.S.C. Sec. 1395 et seq.) and Title XIX (42
20 U.S.C. Sec. 1396 et seq.) of the federal Social Security Act.

21 ~~(e)~~

22 (f) Conduct public social policy research based upon
23 the recommendations of the Director of Mental Health.

24 ~~(f) Arrange for and coordinate epidemiological
25 research through subcontracting with appropriate
26 agencies such as educational or medical research
27 institutions as approved by the director.~~

28 ~~(g) Assist the director in establishing criteria for, and
29 in selecting, regional resource agencies.~~

30 ~~(h) Establish an advisory task force which will advise
31 the Statewide Coordinating Agency on matters related to
32 the implementation of this chapter. Membership on this
33 task force shall be determined by the Statewide
34 Coordinating Agency based upon recommendations
35 which may be made by the following: the Directors of
36 Mental Health; Health Services; Social Services;
37 Developmental Services; Rehabilitation; Aging; and
38 Alcohol and Drug Abuse; the Secretary of Health and
39 Welfare; the Insurance Commission; the President pro
40 Tempore of the Senate; the Speaker of the Assembly; the~~

1 Assembly Committee on Aging and Long/Term Care; the
 2 Assembly Committee on Health; the Senate Committee
 3 on Health and Human Services; and other relevant
 4 legislative subcommittees and select committees as
 5 determined by the Statewide Coordinating Agency.

6 (g) Assist the director, as the director may require, in
 7 conducting directly, or through contract, research in
 8 brain damage epidemiology and data collection, and in
 9 developing a uniform terminology and nomenclature.

10 (h) Assist the director in establishing criteria for and
 11 in selecting resource centers and in designing a
 12 methodology for the consistent assessment of resources
 13 and needs within the geographic areas to be serviced by
 14 the resource centers.

15 (i) Conduct conferences, as required by the director,
 16 for families, caregivers, service providers, advocacy
 17 organizations, and educational institutions in order to
 18 enhance the quality and availability of high-quality,
 19 low-cost care and treatment of brain-impaired adults.

20 4335. In choosing an appropriate nonprofit
 21 community agency to act as the Statewide Coordinating
 22 Agency Resources Consultant, the director shall give
 23 priority to an agency which meets both of the following:

24 (a) An agency which has a proven record of
 25 experience in providing information, technical assistance
 26 and direct services to adults with all types of brain
 27 impairments, their families, and caregivers.

28 (b) An agency which includes family members and
 29 caregivers of brain-impaired adults on its board of
 30 directors.

31 4336. (a) The Statewide Coordinating Agency
 32 Resources Consultant shall submit progress reports on its
 33 activities as required by the director. These reports shall
 34 include, but not be limited to, a summary and evaluation
 35 of the activities of the regional resource agencies
 36 resource centers. Client, caregiver, service, and cost data
 37 shall be provided for each operating regional resource
 38 agency resource center.

39 (b) The department, in consultation with the
 40 Statewide Coordinating Agency, shall conduct an annual

1 evaluation of the effectiveness of the regional resource
 2 agencies Resources Consultant, shall report to the
 3 Legislature by January 1, 1987, on the effectiveness of the
 4 resource centers. The evaluation shall include, but not be
 5 limited to, all of the following:

6 (1) A comparative assessment of the costs and
 7 effectiveness of each type of service or combinations of
 8 services provided.

9 (2) An assessment of the nature and extent of the
 10 demand for services which provide respite, and an
 11 evaluation of their success in meeting this demand.

12 (3) An analysis of the effectiveness of the program in
 13 deterring the institutionalization of brain-impaired
 14 adults, allowing caregivers to maintain a normal routine,
 15 and promoting the continuance of quality care for
 16 brain-impaired adults.

17 (4) Recommendations for ensuring that unmet needs
 18 of brain-impaired persons and their families are
 19 identified and addressed with appropriate programs and
 20 services.

21 4337. The regional resource agencies resource
 22 centers shall serve all of the following functions:

23 (a) Provide directly or assist families in securing
 24 information, advice, and referral services, legal services
 25 and financial consultation, planning and problem-solving
 26 consultation, family support services, and respite care
 27 services, as specified in Section 4338.

28 (b) Provide single entry point access centralized
 29 access to information about and referrals to local, state,
 30 and federal services and programs in order to assure a
 31 comprehensive approach for brain-impaired adults, their
 32 families, and caregivers. Nothing in this chapter shall
 33 prohibit access to services through other organizations
 34 which provide similar programs and services to
 35 brain-impaired adults and their families, nor shall other
 36 organizations be prevented from providing these
 37 programs and services.

38 (c) Assist in the identification and documentation of
 39 service needs and the development of necessary
 40 programs and services to meet the needs of

1 brain-impaired adults in the geographic area.

2 (d) Cooperate with the Statewide Coordinating
3 Agency Resource Consultant and the Director of Mental
4 Health in any activities which they deem necessary for
5 the proper implementation of this chapter.

6 (e) *Work closely and coordinate with organizations
7 serving brain-impaired adults, their families and
8 caregivers in order to ensure, consistent with
9 requirements for quality of services as may be established
10 by the director, that the greatest number of persons are
11 served and that the optimal number of organizations
12 participate.*

13 4338. Agencies designated as regional resource
14 agencies resource centers by the director after
15 consultation with the Statewide Coordinating Agency
16 shall Resources Consultant shall include in their
17 governing or advisory boards, or both, as required by the
18 director, persons who are representative of the ethnic
19 and socioeconomic character of the area served and the
20 client groups served in the geographic area. Resource
21 centers shall carry out the functions specified in Section
22 4337 through the administration and provision of the
23 following services programs and services that reflect the
24 most progressive care and treatment alternatives
25 available for brain-impaired adults, their families, and
26 caregivers. These programs and services may be
27 provided directly or through the establishment of
28 subcontracts as specified in their contract and within the
29 limitations imposed by budget appropriations. The
30 department shall make efforts to achieve a goal that not
31 less than 90 percent of the funds appropriated through
32 contracts with resource centers shall be utilized for direct
33 services, including, but not limited to, the following:

34 (a) Information, advice, and referral and family
35 support services, including, but not limited to, all of the
36 following:

37 (1) Information and counseling about diagnostic
38 procedures and resources.

39 (2) Long-term care planning and consultation.

40 (3) Legal and financial resources, consultation, and

1 representation.

2 (4) Mental health interventions.

3 (5) Caregiving techniques.

4 (b) Respite care services through the flexible and
5 creative use of existing local resources including, but not
6 limited to, all of the following:

7 (1) In-home care.

8 (2) Adult day health and social day care services.

9 (3) Foster and group care.

10 (4) Temporary placement in a community or health
11 facility.

12 (5) Transportation.

13 (c) *Training and education programs for
14 brain-impaired adults, their family members, caregivers,
15 and service providers that will lead to the high-quality,
16 low-cost care and treatment of service clients.*

17 4339. The director shall establish criteria for client
18 eligibility, including financial liability, pursuant to
19 Section 4339.5. Income shall not be the sole basis for client
20 eligibility. The director shall assume responsibility for the
21 coordination of existing funds and services for
22 brain-impaired adults, and for the purchase of respite
23 care services, as defined in subdivision (c) of Section 4331
24 and described in subdivision (b) of Section 4336, with
25 other departments that may serve brain-impaired adults,
26 including the Department of Rehabilitation, the State
27 Department of Health Services, the State Department of
28 Social Services, the State Department of Developmental
29 Services, the Department of Aging, and the State
30 Department of Alcohol and Drug Abuse.

31 4339.5. Persons receiving services pursuant to this
32 chapter may be required to contribute to the cost of
33 services depending upon their ability to pay, but not to
34 exceed the actual cost thereof. The criteria for
35 determining client contributions which may be paid to
36 the regional resource agency resource center under this
37 chapter and standards for their utilization by the regional
38 resource agency resource center in developing new
39 programs and services shall be determined by the
40 director after consultation with the Statewide

1 *Coordinating Agency Resources Consultant.*

2 4339.6. In considering total service funds available for
3 the project, the director shall utilize funding available
4 from appropriate state departments, including, but not
5 limited to: the State Department of Health Services, the
6 State Department of Social Services, the Department of
7 Rehabilitation, the Department of Aging, and the State
8 Department of Alcohol and Drug Abuse. The director in
9 conjunction with the Statewide ~~Coordinating Agency~~
10 ~~shall be involved in the implementation of the~~ *Resources*
11 *Consultant shall coordinate his or her activities with the*
12 *implementation of the Torres-Felando Long-Term Care*
13 *Reform Act (Chapter 1435, Statutes of 1982) in order to*
14 *further the goal of obtaining comprehensive, coordinated*
15 *public policy and to maximize the availability of funding*
16 *for programs and services for persons with brain*
17 *impairments.*

18 SEC. 3. The sum of one million seven hundred
19 thousand dollars (\$1,700,000) is hereby appropriated
20 from the General Fund to the State Department of
21 Mental Health for the purposes of this act.

22 SEC. 4. This act is an urgency statute necessary for
23 the immediate preservation of the public peace, health,
24 or safety within the meaning of Article IV of the
25 Constitution and shall go into immediate effect. The facts
26 constituting the necessity are:

27 In order that certain greatly-needed services to
28 brain-impaired adults may be provided at the earliest
29 possible time, it is essential that this act go into immediate
30 effect.



MISSOURI SENATE

JEFFERSON CITY

EDWIN L. DIRCK
SENATOR, 24TH DISTRICT
CAPITOL BUILDING
JEFFERSON CITY, MISSOURI 63101
TELEPHONE (314) 751-2540

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TO: Senator James Murphy Representative Marvin Proffer
Senator Harry Wiggins Representative Sheila Lumpe
Senator Phil Curls Representative Sandra Reeves
Senator Ralph Uthlaut Representative Derek Holland
 Representative Jay Russell

Directors: Dr. Arthur Mallory, Secondary Education
Dr. Paul Ahr, Mental Health
Barrett A. Toan, Social Services
Rich Heiser, Missouri Protection and Advocacy
 Council

Research Analysts: House - Dan Landon
Senate - Toni Messina

Supervisor, Administrative Secretaries - Mary Lou Scott

FROM: Senator Edwin L. Dirck
Chairman, Head Injury Committee

SUBJECT: Senate Concurrent Resolution No. 12
"Joint Committee on Head Injuries."

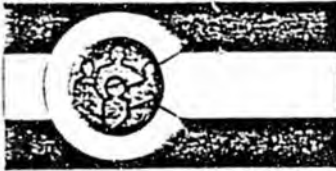
DATE: July 17, 1984

Pursuant to SCR No. 12, the joint committee on head injury is assigned the task of studying the economic impact and emotional hardships of head injured victims across the state. We are also to prepare a report of findings and to prepare recommendations for submission to the 83rd General Assembly.

In conjunction with the National Head Injury Foundation, Missouri Chapter, Inc., we have scheduled a series of hearings during the months of August and September. (Schedule attached) Also enclosed is a packet of information from the National Head Injury Foundation which I believe will give committee members a good overview of our task.

Each committee member and staff person should arrange for their own lodging and transportation. If you have any questions, please notify my office.

ELD/bf



Colorado Head Injury
Foundation, Inc.

TRAUMATIC BRAIN INJURY PACKETS INCLUDE:

- Connecticut Medicaid Regulations for Traumatic Brain Injury - 1984
- Santa Clara Valley Medical Center Community Low Cost Day Program - 1982
- Florida Head Injury Registry Bill - 1985
- Virginia Head Injury Registry Bill - 1984
- Acute Standards of Care for Brain Injury Programs (C.A.R.F.) - 1985
- Insurance Serious Injury Medical Costs - 1983
- RSA Memorandum on Traumatic Brain Injury - 1984
- California Assembly Bill #2913 Regional Brain Damage Center - 1984
- Impact of Head Trauma on Society, Canadian J. Neurol. Sci. - 1984
- Missouri Legislative Resolution Creating Head Injury Task Force,
Services, Prevention

UNITED STATES DEPARTMENT OF EDUCATION
OFFICE OF SPECIAL EDUCATION AND REHABILITATIVE SERVICES
REHABILITATION SERVICES ADMINISTRATION
WASHINGTON, D. C. 20202

SEP 4 1984

INFORMATION MEMORANDUM
MEDICAL BULLETIN NO. 3
RSA-DM-34-37
August 28, 1984

TO : STATE REHABILITATION AGENCIES (GENERAL)
STATE REHABILITATION AGENCIES (BLIND)
RSA REGIONAL COMMISSIONERS (REGIONS I-X)
RSA SENIOR STAFF

SUBJECT: Traumatic Brain Injury

CONTENT: There is increasing national concern about the problems imposed by traumatic brain injury and the vocational rehabilitation program has an opportunity to become more actively involved in the resolution of these problems.

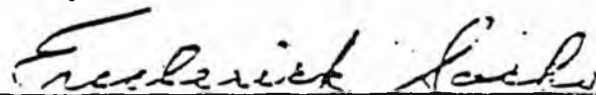
The Committee on Appropriations of the U.S. House of Representatives submitted a report to the whole House on the State of the Union, July 26, 1984, which stated:

"The Committee is encouraged by recent efforts in agencies like the National Institute for Handicapped Research to address the needs of people suffering brain injury due to trauma. With 50,000-90,000 people suffering such injury due to car accidents and other causes, the Committee remains concerned about whether their needs are being adequately addressed. The Committee would like the Rehabilitation Services Administration, in conjunction with all other agencies in the Departments of Education and Health and Human Services involved with issues relating to head injury, as well as outside experts and support groups, to report to the Committee before next year's budget hearings on the following issues: the current research and service delivery activities relative to head injury now being carried out by the various federal agencies; the present needs in research, training and service delivery; the most current techniques in acute care and rehabilitation of head injured persons; and a plan for the future direction that head injury research and service delivery should take.

In addition, the report should address the designation of a specific category of disability for the head injured and the utilization of that category by the relevant Federal and State agencies."

The concern of this Committee is welcomed by RSA. It is noted that while each year from 50,000 to 90,000 persons who have severe residual impairments caused by traumatic brain damage, relatively few of these persons are served by vocational rehabilitation agencies.

It is therefore suggested that State vocational rehabilitation agencies re-examine their policies and practices in serving this group of individuals "with most severe handicaps" with a view toward making a significant contribution to the resolution of vocational rehabilitation problems imposed by this disorder.


Associate Commissioner of Program Operations

Attachment: Medical Bulletin No. 3

cc: CSAVR Executive Director

"A. Physical

Anosia	Spasticity
Visual Impairment	Hemiparesis
Hearing	Paraplegia
Physical Disability	Seizures
a) Orthopedic involvement:	

"B. Cognitive

Memory Deficits--short and long term	Lack of foresight
Perception	Planning--sequencing
Concentration	Judgement
Attention	Headaches

"C. Psycho-Social-Behavioral-Emotional

Fatigability	Anxiety
Euphoria	Restlessness
Denial	Lack of Motivation - inability to self-monitor
Egocentricity	Emotional Lability
Lack of self-esteem	Inability to Cope
Disinhibition	Agitation
Depression	
Sexual Dysfunction	

"The above impairments, any or all, may occur in varying degrees. The severely impaired may encompass all of the above, but it is important to note that with early and ongoing therapeutic intervention, the degree of these symptoms might decrease.

"Intellectual ability might not improve after a period of time, but social and behavioral aspects and memory could improve over long periods of time.

"Increasing the return to a higher functional level should be a continuing goal."

V. Some viewpoints from RSA

1) Eligibility: Persons who have incurred significant traumatic brain injury in virtually every case have a physical or mental disability which constitutes a significant handicap to employment. An issue is whether or not vocational rehabilitation services will benefit the individual in terms of employability.

2) Evaluation: It is vital that the evaluation of an applicant be provided by qualified professional persons who are skilled in the understanding and management of persons who have sustained traumatic brain

Injury. It is recommended that States which have not done so, identify centers where services of a high quality are available for these persons. The National Head Injury Foundation, Inc., 18A Vermont Street, Framingham, Massachusetts 01701, is compiling a nationwide directory of such resources for evaluation, treatment and management which should be helpful.

The National Institute of Handicapped Research has supported the Traumatic Brain Damage Project at New York University Medical Center, the Severe Head Trauma Project at Santa Clara Valley Medical Center in San Jose, California, and four Research and Training Centers in Brain Injury and Strokes, where more than 75 related projects are currently being supported. These centers are located at New York University, Emory University in Atlanta, Georgia, Washington University in Seattle, Washington, and Northwestern University in Chicago, Illinois. These centers should be looked to for the provision of evaluation and therapeutic services for vocational rehabilitation clients and for recommendations concerning other centers of excellence within States.

University medical centers with strong departments of neurosensory and neuropsychology may provide such services and/or know where such services are provided.

The minimum work-up should include an evaluation by a clinical psychologist or a neuropsychologist. Emphasis should be given to what the individual can do, not just what cannot be done. Included in the evaluation should be consideration of premorbid personality, social, educational, and work experience, the nature of deficits, and the need for continuing therapy.

Because the passage of time in itself may enhance the potential of an individual for work, consideration may be given to the use of the authority for extended evaluation.

3) Coordinated services: Ideally, persons with traumatic brain injury should have available to them a coordinated system of care comparable to the National Spinal Cord Injury Service system. Presently, some elements of such a system are in operation. Acute care is provided at trauma centers; brain injury units of medical centers provide intensive care, with subsequent care provided at brain injury centers in rehabilitation units at the center or at related rehabilitation hospitals. But these elements do not form a "system" because they are not integrated or coordinated. A vocational rehabilitation counselor may carry out such an activity for his or her clients.

It is assumed that vocational rehabilitation services in general would be initiated after the person's condition has become relatively stable, possibly some six months post-injury. A major focus of such services would likely be cognitive services provided with the leadership of a

neuropsychologist, neurological services (for the control of complicating medical conditions such as seizures), physical restoration services as indicated, and vocational counseling, prevocational and vocational training services aimed at job placement.

Because of the devastating nature of this disorder, an individual's family may also need services which may be arranged for by the vocational rehabilitation counselor. Many families are helped by meetings with other similarly affected persons. The National Head Injury Foundation has a list of organized support groups and NHIIF chapters by State.

References:

Handbook of Severe Disability, Stolov and Clowers, editors, 1981. U.S. Department of Education, Rehabilitation Services Administration, Washington, D. C. 20202.

Rehabilitation Brief - Bringing Research into Effective Focus, Volume V, No. 5, U.S. Department of Education, National Institute of Handicapped Research, Washington, D. C. 20202.

Neurology Clinics, Volume IV, Number 3, Baylor College of Medicine/The Methodist Hospital, Houston, Texas 77030.

Programs for the Handicapped, November/December 1981. U.S. Department of Education, Clearinghouse on the Handicapped, Washington, D. C. 20202.

Prepared as an attachment to
INFORMATION MEMORANDUM
MEDICAL BULLETIN NO. 1
RSA-EM-84-37
August 29, 1984

*Florida Registry
Bill
FJE
Kenny*

By Representatives Bass and Gordon

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A Bill to be entitled

An act relating to the Department of Health and Rehabilitative Services; creating ss. 413.611 and 413.612, F.S.; providing intent; creating a central registry for reports of head injuries; providing definitions; requiring certain reports of head injuries; creating an advisory council; providing for review and repeal; providing an effective date.

This publication was produced at a cost of 1.5 cents per single page in compliance with the intent and for the information of members of the Legislature and the public.

WHEREAS, there is an absence of factual information concerning the scope and the significance of head injury in the state, and

WHEREAS, this absence of information has inhibited the development of proper care and rehabilitative programs and proper funding in both the private sector and in government agencies, and

WHEREAS, this absence of information has also inhibited the development of programs for the prevention of head injury, NOW, THEREFORE,

Be It Enacted by the Legislature of the State of Florida:

Section 1. Section 413.611, Florida Statutes, is created to read:

413.611 Head-injured persons; legislative intent.—It is the intent of the Legislature to establish a central registry for the collection of such information to facilitate the development of these programs. It is the further legislative intent that the registry ensure the referral of head-injured persons to the Department of Health and

CODING: Words in small roman type are deletions from existing law; words underlined are additions.

RECEIVED

MAY 29 1985

NBMC
ADMINISTRATION

1 Rehabilitative Services by appropriate individuals or public
2 and private agencies in order that such persons might obtain
3 the appropriate rehabilitative services rendered by the
4 department and other providers.

5 Section 2. Section 413.612, Florida Statutes, is
6 created to read:

7 413.612 Central registry for head-injured persons;
8 advisory council.--

9 (1) As used in this section:

10 (a) "Department" means the Department of Health and
11 Rehabilitative Services.

12 (b) "Head injury" means an insult to the skull, brain,
13 or its covering, resulting from external trauma which produces
14 an altered state of consciousness or anatomic, motor, sensory,
15 or cognitive/behavioral deficits.

16 (2) The department shall establish and maintain a
17 central registry of persons suffering a head injury.

18 (3) Every public or private health and social agency
19 and attending physician shall report to the department within
20 5 days after identification of any head-injured person. The
21 consent of such person shall not be required.

22 (4) The report shall contain the name, age, residence,
23 diagnosis of the person, and such additional information as
24 may be deemed necessary by the department.

25 (5) There is created within the department a 13-member
26 Advisory Council on Head Injury. The council shall be
27 composed of physicians, other allied health professionals,
28 administrators of head-injury programs, representatives from
29 support groups and the Florida Neurosurgical Society. Members
30 of the council shall be appointed by the secretary of the
31 department and shall serve for terms of 4 years, except that 6

1 members shall be initially appointed to terms of 2 years. The
2 council shall meet at least 4 times annually and members shall
3 be entitled to per diem and travel expenses in accordance with
4 the provisions of s. 112.061. The council shall provide
5 advice and expertise to the department in the preparation,
6 implementation, and periodic review of a coordinated
7 rehabilitation program for head-injured individuals in
8 Florida. The council shall assist the department in
9 developing a coordinated multilevel plan of care which will be
10 presented to the secretary for review and approval by July 1,
11 1986.

12 Section 3. Subsection (5) of s. 413.612, Florida
13 Statutes, as created by this act, is repealed on October 1,
14 1993, and The Advisory Council on Head Injury shall be
15 reviewed by the Legislature pursuant to s. 11.611, Florida
16 Statutes.

17 Section 6. This act shall take effect upon becoming a
18 law.

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20 *****

21 HOUSE SUMMARY

22 Requires the Department of Health and Rehabilitative
23 Services to create a central registry for head-injured
24 persons. Requires health agencies and physicians to
25 report head injuries to the department. Creates an
26 Advisory Council on Head Injury. Provides the membership
27 and duties of the council. Provides legislative findings
28 and intent. Provides for review and repeal.
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31

DOCUMENTATION OF HEAD-INJURED VICTIMS IN COLORADO
WITH SEVERE BEHAVIORAL PROBLEMS

<u>SEX</u>	<u>AGE</u>	<u>DATE OF INJURY</u>	<u>CURRENT LIVING SITUATION</u>	<u>BEHAVIORAL PROBLEMS</u>	<u>PHYSICAL STATUS</u>	<u>INSURANCE</u>
. F	33	Anoxic 4/82	Psych. Hosp. CU	Organic lability, anger, depression	mobile	John Hancock Group Health & Accident
. M	29	2 years ago	Nursing Home Keller Cty	Sexually, socially inappropriate, wanders	mobile	Colo. XIX
. M	24	2 years ago	Regency	Impulsive, combative at times, inappro- priate socially and sexually	mobile	Trust Fund & Colo. XIX
. M	34	1977	Mounclair Nursing Home in Denver		mobile	Colo. XIX
i. M	22	8/79	At home (Denver)	Passive, Constant Supervision	mobile	Colo. XIX
i. M	23	1982	Home (Denver)	Constant Supervision, Suicidal	mobile	Colo. XIX
7. F	29	1980	Hospital, Pueblo	Suicidal, Constant Supervision	mobile	Colo. XIX
3. M	19	Nov. 1982	Rehab. Hosp. Denver	Physically aggressive, non-cooperative	mobile	Colo. No-flt Auto, Colo. XIX
9. M	20	1980	Home in Denver	Abusive, Constant Supervision	mobile	Colo. XIX
0. F	26	1981	Pueblo Hosp.	Psychosis, Suicidal gestures	mobile	Colo. XIX
1. M	24	1981	Home Grand Junction	Aggressive physically	mobile	Colo. XIX
2. M	36	:1980	Home Grand Junction	Aggressive physically	wheelchair	Colo. XIX
3. M	37	1980	Home with parents	Physically abusive	wheelchair	Medicare
4. M	27	1980	Colorado nursing home	Verbally explosive	wheelchair	Colo. XIX
5. F	24	1979	Home with parents	Sexual acting out	mobile	private insurance

1983 - CHF Survey Regency, Craig, Hilltop

DOCUMENTATION OF HEAD-INJURED VICTIMS IN COLORADO
WITH SEVERE BEHAVIORAL PROBLEMS

	<u>SEX</u>	<u>AGE</u>	<u>DATE OF INJURY</u>	<u>CURRENT LIVING SITUATION</u>	<u>BEHAVIORAL PROBLEMS</u>	<u>PHYSICAL STATUS</u>	<u>INSURANCE</u>
5.	F	26	1982	Nursing home	Physically aggressive	wheelchair	Colo. XIX
7.	M	39	1982	Home with sister	Alcohol abuse & Physically aggressive	mobile	Workers Compensation
8.	M	18	1980	Home with parents	Alcohol abuse & Physically aggressive	mobile	Private insurance
9.	F	21	1980	Home with Parents	Impulsive, non-cooperative, suicidal	mobile	No-flt, \$8,000
10.	M	30	1981	deceased	Suicide	mobile	Private Health & accident
11.	M	22	7/81	home	Verbally abusive, Lack of cooperation	mobile	Colo. XIX
12.	N	36	1981	home	Alcohol abuse, Anti-social	mobile	Colo. No-flt., Colo. XIX
13.	M	33	5/80	home	Verbally abusive, Physically abusive	mobile	Colo. XIX
14.	F	18	5/80	home	Verbally abusive, Physically aggressive	mobile	Colo. XIX
15.	M	30	12/81	jail	Alcohol abuse, Physically abusive, Multiple car accidents	mobile	Colo. XIX
16.	M	24	8/82	home	Lack of cooperation, Substance abuse	mobile	Colo. XIX
17.	M	30	12/80	home	Withdrawn	mobile	Colo. XIX
18.	M	31	1975	home	Substance abuse, Uncooperative	mobile	Colo. XIX
19.	M	33	9/81	home	Uncooperative	mobile	Colo. XIX
20.	M	27	1977	Nursing home	Suicidal, Uncooperative	wheelchair	Colo. XIX
21.	M	22	6/79	Denver psychiatric ward	Physically and verbally abusive	wheelchair	Colo. XIX