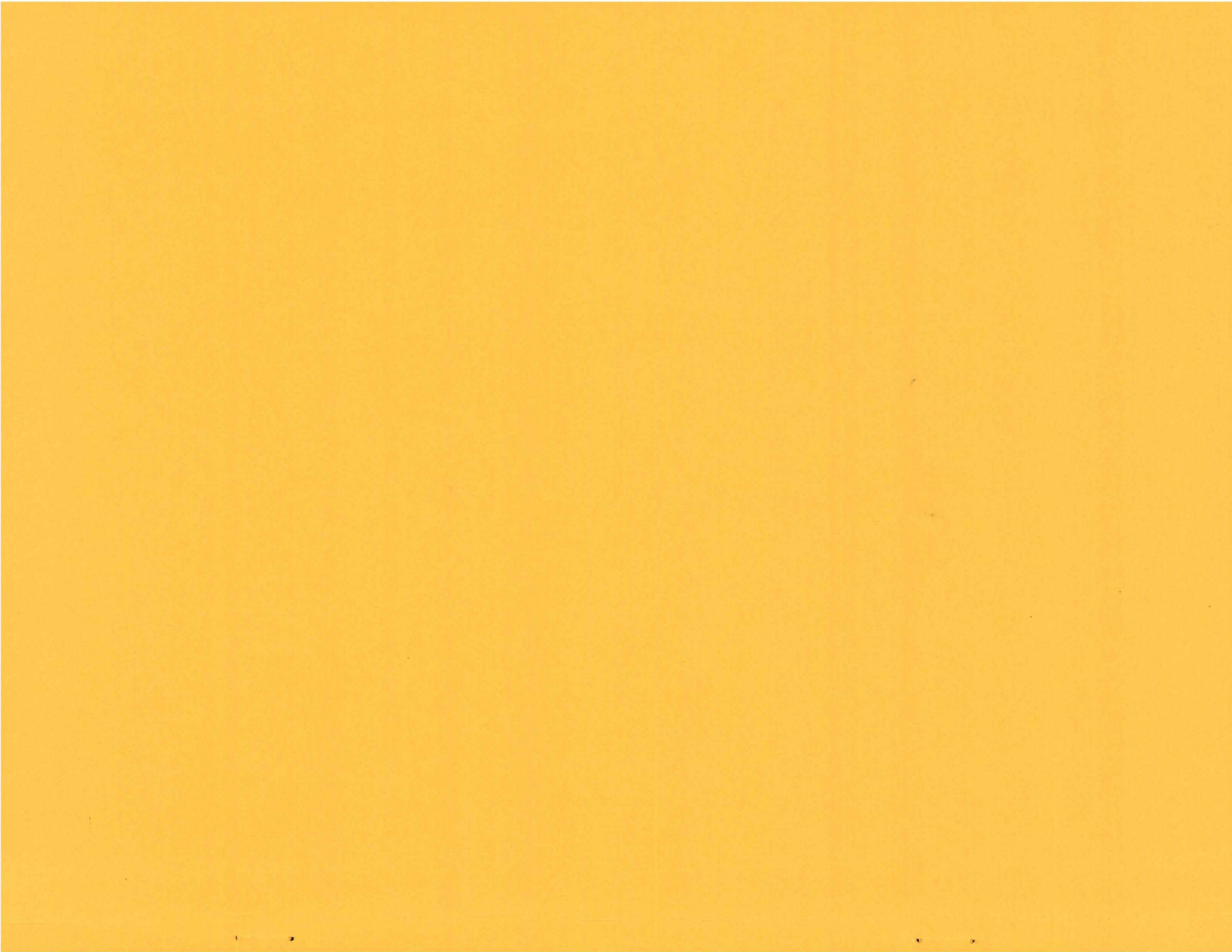


**IOWA
ADVISORY COUNCIL
ON
HEAD INJURIES**

Annual Report
&
State Plan

FY 1991



IOWA ADVISORY COUNCIL ON HEAD INJURIES

**Annual Report
&
State Plan**

February, 1992

Iowa Advisory Council on Head Injuries
Division of Persons with Disabilities
Department of Human Rights
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Iowa Commission of Persons with Disabilities

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TERRY E. BRANSTAD
GOVERNOR

DONALD W. WESTERGARD
ADMINISTRATOR
281-5969

February 10, 1992

**The Honorable Terry Branstad
Members of the General Assembly
State Capitol Building
Des Moines, Iowa 50319**

Dear Governor Branstad and Members of the General Assembly:

On behalf of the Iowa Advisory Council on Head Injuries it is my pleasure to forward to you the Annual Report as required by Iowa Code summarizing the activities of the Council for the past year.

Additionally, this report contains a Service Delivery State Plan which outlines the goals and objectives of the Council. The elements addressed are as follows:

- 1. Prevention**
- 2. Central Registry for Brain and Spinal Cord Injuries**
- 3. Medical Rehabilitation**
- 4. Community Services**
- 5. Staff Training & Public Education**
- 6. Family Financial Support**

We wish to thank you for your continued support of Iowans who have sustained brain injuries and look forward to working with you during the coming year.

Please do not hesitate to contact the Council if we may be of further assistance to you.

Sincerely,

**Jo Ann Kramer,
Chairperson**

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PREFACE

Head injury is the leading cause of death and disability before the age of 44. It is referred to as the "Silent Epidemic". The majority of the persons who have sustained head injuries are males injured between the ages of 15 - 25.

Medical and technological advances have resulted in greater rates of survival for persons sustaining traumatic head injury, with an expected continuation of this trend. The increased survival rate has placed a burden on current rehabilitation services, long term care, supervised residential living, vocational rehabilitation, supported employment, and community support programs.

INTRODUCTION

In the spring of 1989, the Iowa Legislature passed a bill establishing the Advisory Council on Head Injuries and placed the Central Registry for Brain and Spinal Cord Injuries in the Department of Public Health.

The Advisory Council was assigned to study the needs of persons with head injury and to make recommendations that address those needs. The Iowa Advisory Council on Head Injuries was established by executive action on June 5, 1989. Governor Branstad appointed 10 voting members and 7 ex-officio members to the Council. The members of the Council shall include persons with head injuries, representatives of industry, labor, business, and agriculture, representatives of federal, state, and local government, and representatives of religious, charitable, fraternal, civic, educational, medical, legal, veteran, welfare, and other professional groups and organizations. The Council shall represent every geographic and employment area in the state, and include members from both sexes. The Council was administratively assigned to the Division of Persons with Disabilities within the Department of Human Rights.

The Council is authorized to make recommendations to the Governor and the General Assembly regarding development and administration of a state plan to provide service for Iowans with head injury. The Council shall:

- (1) Promote meetings and programs for the discussion of methods to reduce the debilitating effect of head injuries, and disseminate information in cooperation with any other department, agency, or entity on the prevention,

evaluation, care, treatment, and rehabilitation of persons affected by head injuries.

- (2) Study and review current prevention, evaluation, care, treatment, and rehabilitation technologies and to recommend appropriate preparation, training, retraining, and distribution of manpower and resources in provision of services to persons with head injuries through private and public residential facilities, day programs, and other specialized services.
- (3) Participate in developing and disseminating criteria and standards which may be required for future funding or licensing of facilities, day programs and other specialized services for persons with head injuries in the state of Iowa.
- (4) Report annually to the Governor, and the General Assembly on Council activities, and results of its studies and recommendations believed necessary to promote the welfare of persons with head injuries.

This report will provide an update of the Council's progress toward attainment of these goals and objectives, in their effort to conceptualize a statewide service delivery system for individuals with head injury and their families.

INCIDENCE

Iowa Code 135.22 mandates that hospitals and physicians report all head injuries to the registry within forty-five (45) days after the close of the quarter in which the patient was discharged. The following information is based on data collected from January 1, 1991 through September 30, 1991 in the Iowa Central Registry for Brain and Spinal Cord Injuries.

The E-Code (cause of injury) information is categorized as following:

All transportation; Motor Vehicle, Railway, All Terrain, Water Transport, Vehicle (ATV), Motorcycle, Non-Motor Vehicle, All Bicycle, Animal, All Other Vehicles, Pedestrians, Motor Vehicle Operator/Non-Motorcycle and Motor Vehicle Passenger/Non-Motorcycle.

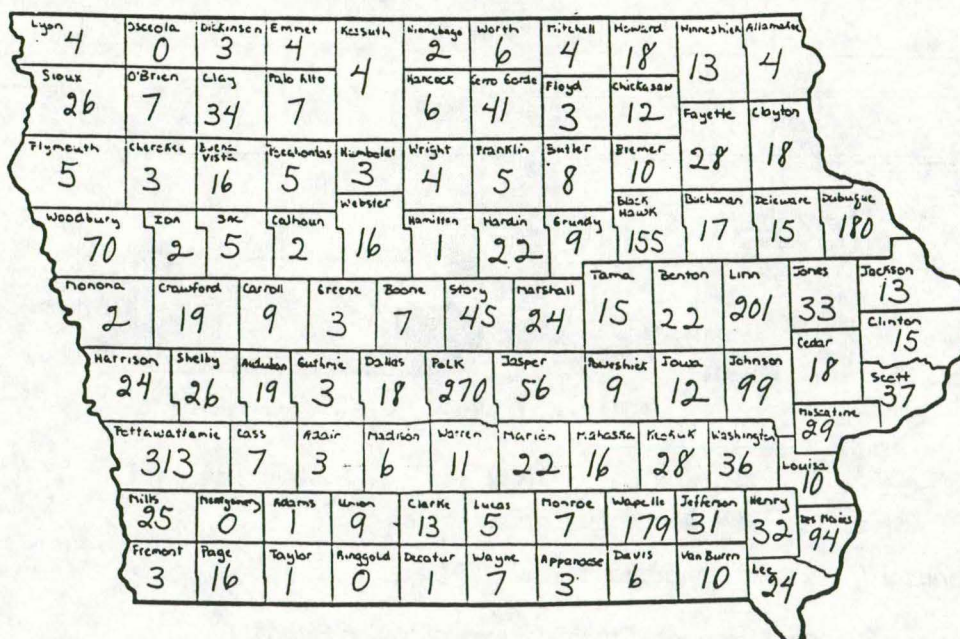
Unintentional: Falls, Diving, Sports/Falls, Animal/Environment, Drowning/Suffocations, Struck by Objects, Piercing Objects, Machinery, Explosions and Agricultural Machinery.

Intentional; Assault, Child Battering, Suicide and Legal Intervention.

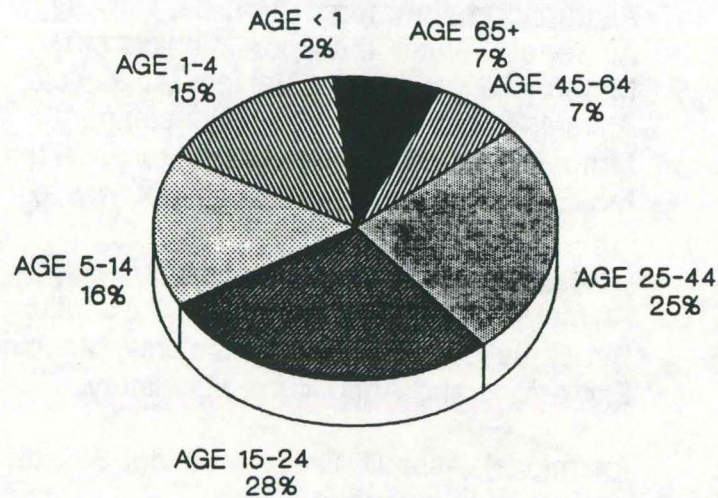
Undetermined Intentionality

Traumatic Brain Injuries by County

January 1, 1991 through September 30, 1991



Traumatic Brain Injuries by Age for Males

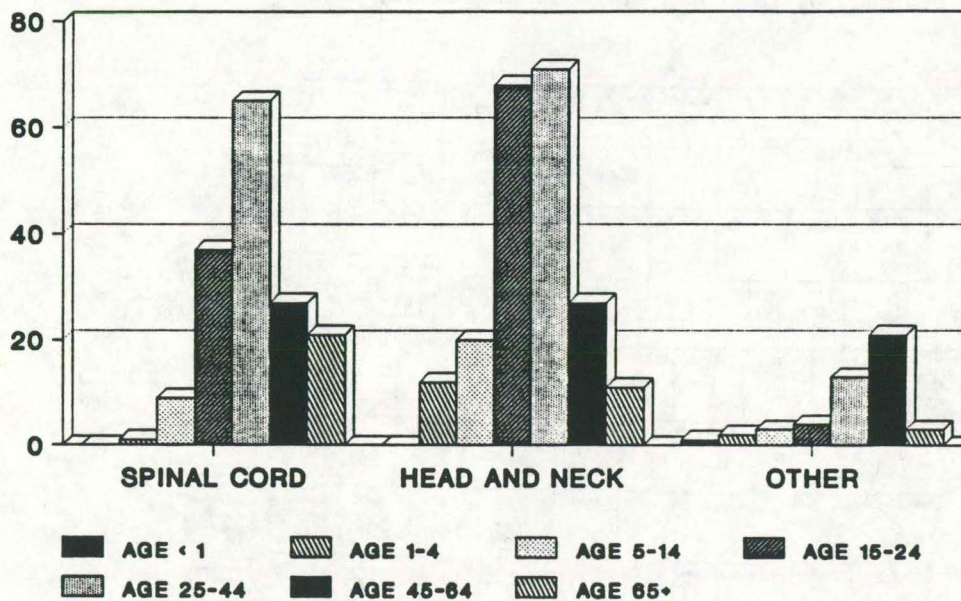


January 1, 1991 through September 30, 1991

N = 1,789

Prepared by Alan Hancock, Criminal Juvenile Justice Planning

Additional Injuries by Age for Males



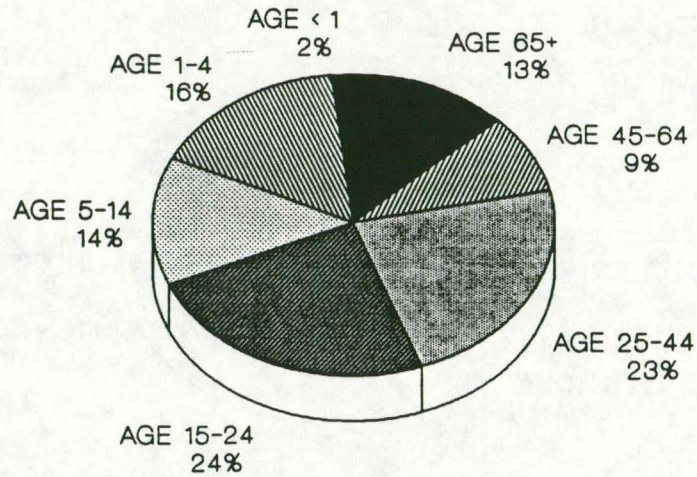
N = 419

Other = Anoxia, Infection,
Vascular and
Poisoning

January 1, 1991 through September 30, 1991

Prepared by Alan Hancock, Criminal Juvenile Justice Planning

Traumatic Brain Injuries by Age for Females

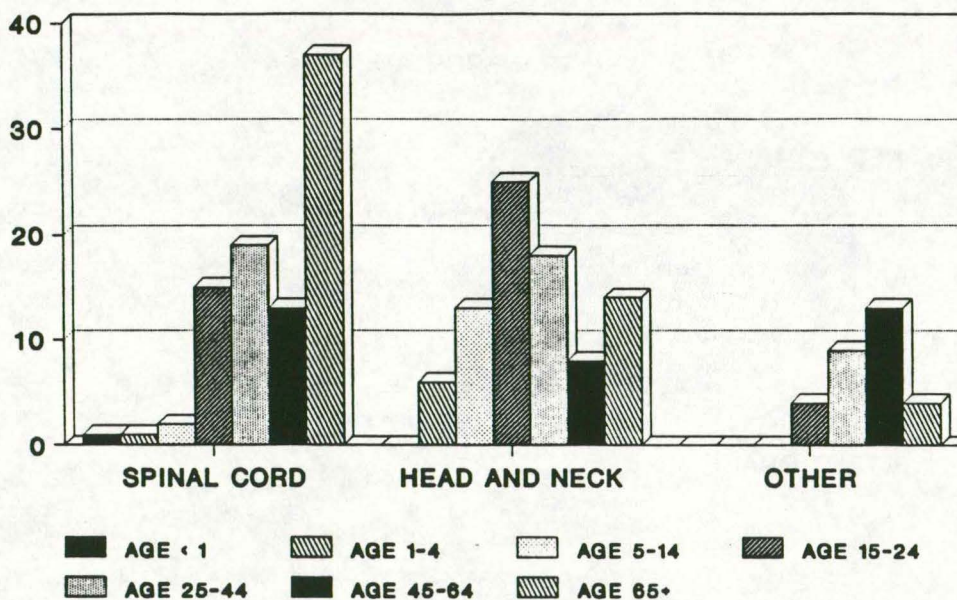


January 1, 1991 through September 30, 1991

N = 1,170

Prepared by Alan Hancock, Criminal Juvenile Justice Planning

Additional Injuries by Age for Females



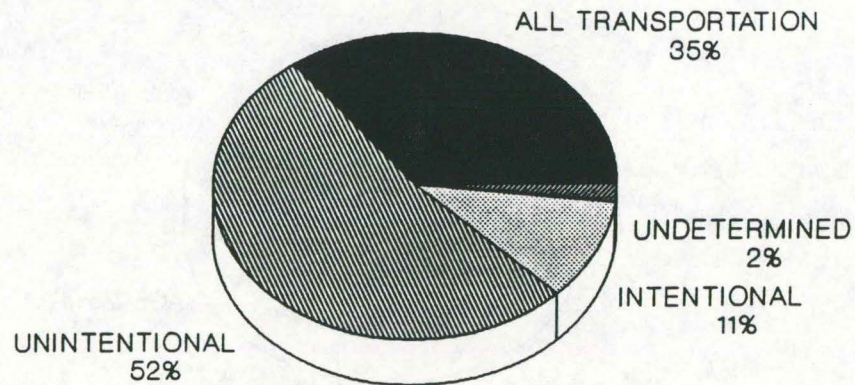
N = 202

Other = Anoxia, Infection,
Vascular and
Poisoning

January 1, 1991 through September 30, 1991

Prepared by Alan Hancock, Criminal Juvenile Justice Planning

Traumatic Brain Injuries by Cause for Males

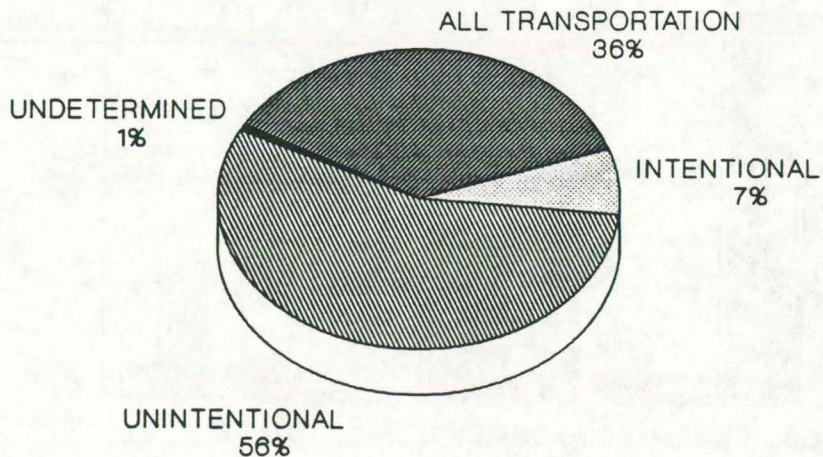


January 1, 1991 through September 30, 1991

N = 1,789

Prepared by Alan Hancock, Criminal Juvenile Justice Planning

Traumatic Brain Injuries by Cause for Females

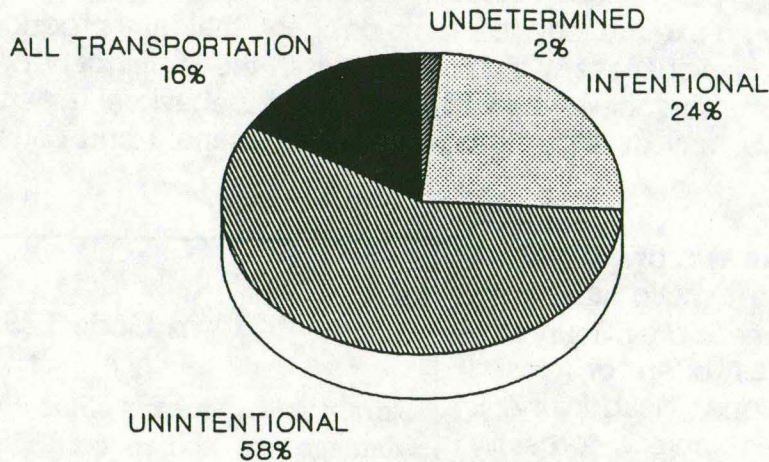


January 1, 1991 through September 30, 1991

N = 1,170

Prepared by Alan Hancock, Criminal Juvenile Justice Planning

Head & Neck Injuries for Males and Females



January 1, 1991 through September 30, 1991

N = 296

Prepared by Alan Hancock, Criminal Juvenile Justice Planning

Head and neck injuries include scalp wounds, broken jaws, broken noses, injuries to the cranial nerves and late effects of these injuries.

As expected, males experience 60% or 1,789 of the traumatic brain injuries reported. Females had 1,170 traumatic brain injuries, which continues last years pattern.

"Unintentional injuries" continues to be the most significant cause of injury as evidenced by the 1,757 injuries reported. "Falls" within this category constitute the majority of the injuries especially for children under 5 years of age and females over 65 years of age. Children under 5 years of age account for 352 of the reported falls, and females over 65 years of age represent 122 of reported falls. There were 1,270 falls reported between January 1, 1991 and September 30, 1991.

"Transportation" which includes motor vehicles cause the majority of the injuries reported. Of the 922 motor vehicle crashes females 15-20 years of age had 119 injuries reported and males 21-28 years of age sustained 156 injuries reported.

"Intentional" which includes assaults, child battering and suicides is the third major category of injuries. Assaults is the largest sub-category. Males are involved in over twice as many assaults as females. Of the 268 assaults reported, 185 injuries were males and 83 injuries for females.

DEFINITION

Traumatic head injury is a sudden insult to the brain, not of a degenerative or congenital nature, caused by an external physical force or agent, that may produce a diminished or altered state of consciousness, which may result in the impairment or alteration of the following: cognition, personality, as well as physical, behavioral, or emotional function. These impairments may be either temporary or permanent and cause partial or total disability.

Medically there are two primary types of head injury: traumatic and non-traumatic. A traumatic brain injury can be categorized as open or closed head injury. An "open head injury" is caused when an object forcefully penetrates the skull and brain, thereby damaging the brain. A "closed head injury" refers to the damage to the brain that is caused without penetration of the brain. Non-traumatic causes of brain injury involves chemical agents, loss of oxygen to the brain, and brain pathology, as outlined in Iowa Code 135.22.

Iowa Code 135.22

"brain injury" means clinically evident brain damage or spinal cord injury resulting directly or indirectly from trauma, infection, anoxia, or vascular lesions not primarily related to degenerative or aging processes, which temporarily or permanently impairs a person's physical or cognitive functions.

During acceleration/deceleration events, such as motor vehicle crashes, the brain is tossed and rotates within the skull. Because the brain is encased within a rough, bony, rigid skull; strong impact may cause a ripple effect throughout the gelatin-like brain, causing the brain to twist and tear. Bleeding within and around the brain tissue as well as swelling of the brain tissue leads to increased intracranial pressure which lead to additional brain damage. Localized damage may also occur with bruising or tearing of the brain tissue.

Persons with a head injury commonly experience deficits in one or all of the following categories. The effects of head injury vary greatly, depending on the nature and severity of the injury.

- * **Cognitive impairments;** memory deficits (long or short term), self awareness, communication, spatial relations and perception, coordination, conceptual and constructional skills, attention and concentration, reading, writing, sequencing or judgment, problem

solving, planning and decision making, thinking and reasoning, and decreased capacity for abstraction.

*** Physical impairments;** vision, hearing, speech and other sensory impairments, balance, ataxia, strength and equilibrium, spasticity of muscles, range of motion, coordination, headaches, spatial orientation, paralysis on one or both sides and seizure disorders. Many persons with head injury appear to be recovered physically but may experience problems with fine motor control.

*** Social/behavioral impairments;** self esteem, awareness of social rules and roles, impulsivity, confabulation, impatience, appearance and grooming, family relationships, lethargy, emotional lability, age-appropriate behavior, lack of motivation, depression, sexual dysfunction and denial.

FEDERAL INITIATIVES

Interagency Head Injury Task Force

The House Committee on Appropriations encouraged the establishment of an Interagency Head Injury Task Force to identify gaps in research, training and service delivery, thereby recommending solutions addressing the needs of persons with traumatic head injuries. Concurrently, the Senate Committee on Appropriations encouraged increased efforts among government agencies in these areas.

In 1988, the Secretary of the Department of Health and Human Services established the Interagency Head Injury Task Force. He appointed as its chair, the Director of the National Institute of Neurological Disorders and Stroke, National Institutes of Health, and included representatives from thirteen federal agencies.

In February 1989, the Interagency Head Injury Task Force issued the following recommendations.

Recommendation 1 - Establish "traumatic brain injury" as a category in reporting systems.

Recommendation 2 - Designate a lead Federal agency with responsibility for overall coordination and planning for Federal, state and private sector activities and establish a government-private sector advisory group to assist the effort.

Recommendation 3 - Encourage the establishment of working groups at the state and local level to provide leadership and coordination.

Recommendation 4 - Create a national network of fifteen comprehensive regional head injury research centers, beginning with the immediate establishment of five centers and adding five additional centers per year for the next two years.

Recommendation 5 - Organize a decentralized system of care networked with regional head injury research centers to ensure accessibility to appropriate care. Inform traumatic brain injury victims and their families about the availability of such service facilities.

Recommendation 6 - Study and document the financial issues relevant to patient and family services, societal cost and related economic impact of traumatic brain injuries.

The Centers for Disease Control (CDC) has been designated as the lead federal agency and is responsible for carrying out these recommendations.

Regional Comprehensive Head Injury Service System

In 1990, the Iowa Advisory Council on Head Injuries worked with the Missouri Head Injury Advisory Council in seeking a grant on behalf of Region VII. Region V was the closest region to obtain this grant. Although Iowa is not included in this region, the Council has been asked to attend as a visitor. The following is a brief summary of the Region V vision.

The Midwest Regional Head Injury Center for Rehabilitation and Prevention was established at the Rehabilitation Institute of Chicago in December of 1990. Sponsored through a cooperative agreement with the United States Department of Education, Rehabilitation Services Administration, this center will demonstrate a model system of care for traumatic brain injury which promotes improved systems of prevention, acute care and

rehabilitation. The interagency collaboration between Region V service providers focuses on;

1. Consumer and family outreach.
2. Prevention of traumatic brain injury.
3. Expansion and evaluation of a model system of care.
4. Prevention of post-injury substance abuse.
5. Development and dissemination of training products for state vocational rehabilitation counselors and other rehabilitation services providers which address evaluation, case management, supported employment and job placement activities.
6. Facilitation of an information exchange network.
7. Identification and elimination of barriers of effective rehabilitation services.

The Intermodal Surface Transportation Efficiency Act of 1991

In December of 1991 the Transportation Act of 1991 was signed into law by President Bush. The Council is interested in this law as it references helmet, seat belt and intoxicated drivers. As of this writing, the Council has just received a full copy of the law, and their recommendations will be forthcoming.

Americans with Disabilities Act

The Americans with Disabilities Act is to extend to people with disabilities, including head/brain injury, civil rights similar to those now available on the basis of race, color, sex, national origin, and religion through the Civil Rights Act of 1964. It prohibits discrimination on the basis of disability in the private sector and in state and local governments, employment, public accommodation and services, including transportation provided by private and public entities. It also includes provision for telecommunication relay services.

COUNCIL ACCOMPLISHMENTS

Mandatory Reporting

As previously mentioned, Iowa Code 135.22 mandates that hospitals and physicians report all head injuries to the registry within forty-five (45) days after the close of the quarter in which the patient was discharged. During the summer of 1990, the staff for the Advisory Council on Head Injuries visited 19% of Iowa's hospitals. Hospital compliance has increased to 83% in 1991 from 60% in 1990. The Council funded the registry for two years and supported efforts for the registry to become self-sufficient through a successful federal grant application.

Interagency Reporting

The Council has developed communication channels between agencies and helped promote interagency working relationships within state government. Furthermore, staff regularly attends the meetings of the Iowa Commission of Persons with Disabilities, Iowa Department of Education - Head Injury Advisory Committee, the Iowa Department of Public Health - Disability Prevention Advisory Committee and the Prevention of Disability Policy Council.

Disability Determination

The Council is working with the University of Iowa Hospitals and Clinics and the Division of Disability Determination, a subdivision of the Division of Vocational Rehabilitation, within the Iowa Department of Education. A system has been established, within Disability Determination, which allows the "flagging" of specific head injury cases, thereby expediting the qualification process for disability determination.

Revolving Fund

The Council was successful in facilitating discussions between the Iowa Department of Human Services and the University of Iowa Hospitals and Clinics regarding the coordination of a revolving fund. Under this agreement, University of Iowa Hospitals and Clinics would establish a revolving fund for payment of needed post-acute care until Medicaid eligibility is established. Repayment would then be made to the revolving fund, and Medicaid would be billed for the care and services. Both parties have created a cooperative agreement as a result of these discussions.

The revolving fund will use current funding and save money for the State of Iowa, by:

- * Reducing the length of acute hospital stay for persons with head injuries
- * Prevent the State of Iowa from paying higher medical expense rates for persons who, at a later date, are not approved for Medicaid under current policy
- * This systems change could save as much as \$ 250,000, as documented by actual study

This fund is expected to become operational in early February, 1992.

COUNCIL TASK FORCES

Prevention

The Prevention Task Force of the Advisory Council on Head Injuries conducted a search to identify prevention activities currently underway within the state of Iowa (Appendix A). All identified agencies either fund or participate in prevention activities. The range of these activities is very broad, but not necessarily comprehensive. All involve some educational effort which is generally targeted to a specific age group and specific type of injury. Only a few are able to provide statistics on the effectiveness of their efforts. Some programs have a statewide focus while others have a limited geographic focus. Funding for these myriad of activities comes primarily from the public sector.

Service Provision

The Service Provision task force conducted a preliminary statewide survey, to ascertain availability and providers who indicated they had head injury programs. The results of this survey will enable the Council to conduct an in-depth survey of programs offering head injury services and identify what specifically is available.

A family survey was conducted, by the Service Provision task force, in order to better understand families satisfaction with services received.

In 1991, the Council authored HF435 and SF280, which would establish a trust fund for brain and spinal cord injuries by placing surcharges on certain driving convictions. This money was to be used as a "payor of last resort". Unfortunately, neither of the bills made it out of committee.

PUBLIC AWARENESS AND EDUCATION

The Council and staff conducted several projects to inform the general public of the activities of the Council as well as enhance public awareness about the needs of Iowans with head injuries.

Projects included the following:

Newsletters

- * Prepared article for Commission of Child Youth & Family newsletter on head injury prevention and children.
- * Prepared articles for Commission of Persons with Disabilities newsletter on activities of the Council and general information.
- * Prepared articles for Iowa Head Injury Association newsletter on activities of the Council.

Presentations

- * Presented at Iowa State University, Awareness of Disability Days - Tuesday Topics, on "Head Injury Awareness & Available Resources".
- * Presented at Des Moines Area Community College, Person with Disabilities Awareness Week - "Head Injury Awareness & Available Resources".
- * Presented for the Disability Advocates in Southwest Iowa - "Head Injury Awareness & Available Resources".
- * Presented at the National State of the States on Issues affecting Iowa.
- * Presented at the 6th Traumatic Brain Injury Conference, University of Iowa - "Forum for Identification of Financial Support for Head Injured"
- * Presented at the University of Missouri - "Issues Forum".

Publications

- * Co-authored an article for the Des Moines Register.
- * Developed Council brochure.

Public Awareness Campaign

- * Prepared "Head Injury Awareness Kit" for the Iowa Department of Human Rights.
- * Cosponsor of an "Unparty" to celebrate Head Injury Awareness Month with the Iowa Head Injury Association and Younker Rehabilitation - Life Quality Center.
- * Prepared a brief for the Iowa Commission on the Status of African-Americans on head injury awareness.
- * Prepared a brief for the Iowa Commission on Latino Affairs on head injury awareness.
- * Presented at KWKY radio on "Head Injury Awareness & Available Resources".
- * Presented at KUCB radio on "Head Injury and Chemical Dependency".

Legislation

- * Co-sponsored legislative reception with Iowa Commission of Persons with Disabilities.
- * Assisted the Iowa Head Injury Association with their legislative day.
- * Authored Head Injury Trust Fund legislation.

Service Delivery State Plan

for Individuals with Brain Injury

For information only please refer to

3-14-66 14-1-1000 2-10-66 1-10-66

SERVICE DELIVERY STATE PLAN

ELEMENT 1: PREVENTION

Based on injury demographics, it is apparent that the incidence of head injury can be greatly reduced through prevention activities. In Iowa, 35% of all head injuries are caused by automobile crashes and 40% are related to falls (Central Registry for Brain and Spinal Cord Injuries, 1989). Injuries have traditionally been viewed as unavoidable accidents rather than a health problem. Yet injuries are the leading cause of death and disability in children and young adults and cause the loss of more working years than all forms of cancer and heart disease combined.

Three general strategies are available to prevent injury:

1. Education - Persuade persons at risk to alter their behavior.
2. Legislative - Require individual behavior change by law or administrative rule.
3. Automatic - Provide automatic protection by product and environment design.

In 1983, Congress enacted a law authorizing the Secretary of the U.S. Department of Transportation to request a study on trauma/injury by the National Academy of Sciences. The committee issued a report in 1985, "Injury in America: A Continuing Health Problem". One of the findings of the committee was the lack of data necessary for the study of the epidemiology of most injuries which includes traumatic brain injury. This was true in Iowa until the Central Registry for Brain and Spinal Cord Injuries was established in July, 1987. Systematic data collection is essential for planning and evaluating prevention programs.

Falls are the most common cause of traumatic brain injury to people in Iowa. The circumstances under which falls occur vary widely, making it difficult to recommend broadly applicable prevention strategies. Falls tend to be bimodal in nature, occurring to the very young and the very old. Knowledge of these varied circumstances is limited in part by the ICD-9 codes which do not provide detailed information. Among the most frequently specified circumstances of fatal falls are falls on stairs, out of buildings, and from ladders and scaffolds.

The first step to be taken in identifying potential prevention measures for falls is to gain more detailed insight into the circumstances of their occurrence. No prevention efforts outside of institutional settings were identified, to date, within the state of Iowa to deal with the problem of injuries resulting from falls.

The second most common cause of traumatic brain injury in Iowa is due to motor vehicular crashes which include automobiles, motorcycles, other motorized vehicles and automobile/pedestrian collisions. The focus of most prevention activities have been on the causes of this category of injuries.

The U.S. Department of Transportation reports that in fatal and nonfatal motor vehicle crashes the severity of injury to the head is greater than injury to any other anatomic region. Furthermore, clinical studies show that when multiple injuries are present the brain injury is the major determining factor in predicting the patient's prognosis. Clearly, any measure that prevents motor vehicle crashes will also reduce the incidence of brain injuries. Measures designed to reduce injury severity will also play an important role in preventing and limiting brain damage.

Motor vehicle occupant protection is one approach to injury control. Safety belts and air bags have been shown to be effective in saving lives and preventing injuries.

Lap/shoulder belts reduce the risk of death in a motor vehicle crash about half. They provide protection for the head in low speed crashes by preventing contact with hard or lacerating surface. They also provide protection for back seat passengers. Of particular importance is the role of the safety belt in preventing ejection of occupants in roll-over crashes. **Ejection is associated with high mortality rates; 25 times higher than for occupants not thrown from vehicles.** However, safety belts are only effective if they are worn. When used alone, safety belts do not provide maximum protection for the head.

In high speed crashes, spinal cord injuries, acceleration/deceleration brain injuries and impact brain injuries may occur, even with safety belts. Air bags play an important role in preventing head injuries in head-on crashes.

Iowa does have a law requiring safety belts. However, this is for only the passengers in the front seat of automobiles. Iowa also has a mandatory child restraint law for children under six.

Motorcycles are associated with the highest mortality rates of all forms of motor transportation. Per passenger mile, mortality is 16 times greater than for cars. The most successful strategy for reducing mortality and brain injury has been the passage of laws requiring helmet use. Motorcyclists deaths have been reduced by about 30% in states with helmet laws. Iowa is one of those states where the helmet law has been repealed (1976) and a subsequent rise in motorcycle deaths was experienced in the first three

years following repeal. The number of fatalities associated with motorcycle crashes has decreased since a high of 89 in 1979 to 37 in 1990. This is theorized to be related to fewer registered motorcycles and fewer miles ridden.

Helmets are not required for mopeds, which only recently have come into widespread use, and which are used heavily by adolescents. Bicyclists as well as moped operators stand to benefit from protective helmets. All terrain vehicles (ATV's) have recently become popular for recreational and agricultural use. Shortly, after their introduction, the Consumer Product Safety Commission began receiving reports of large number of injuries and an alarming number of deaths, most caused by massive brain and spinal cord injuries. The number of reported ATV accidents is certainly an underestimation of the true figures. Because no International Classification of Disease (ICD) code exists exclusively for ATV's they cannot be identified in hospital discharge data or death certificates. There are no regulations in Iowa for ATV's except that they are prohibited on public roads. Providing ATV users with extensive instructional material has not been and will never be a solution to ATV's which have serious design problems. The popularity of ATV's among young children has greatly compounded the consequences of using these inherently dangerous vehicles.

Teenagers represent the highest risk age group for injury and death in motor vehicle crashes. The statistics in Iowa certainly support this. A sharp increase is noted at age 15. This most likely correlates to when teenagers begin driving. The peak age for motorcycle fatalities is slightly higher (25-34 years old) than for automobiles. It has been found that in states such as New Jersey where the age of licensure is 17, that the motor vehicle occupant death rates are lower for 16 years old than is states where the driving age is 16. Furthermore, there is no compensating effect with unusually high rates for 17 year old when licensing is postponed for a year. Consequently, it appears that the postponement of licensure results in a net savings of teenage lives. An innovative risk reducing measure has been successfully implemented in New York, Pennsylvania, Louisiana, and Maryland. Sixteen year old drivers are limited to daytime and early evening driving. Curfews prohibit nighttime driving in these states when a disproportionate number of fatal crashes occur. Teenagers do 20% of their driving at night, but more than half of the crash fatalities occur at night.

Prevention measures that target teenagers are of special significance because of the tragically disproportionate level of injury and mortality in this young age group. The importance of automatic protection must be stressed because teenagers are among those least likely to wear safety belts, yet most likely to be involved in a crash. Providing passive automatic protection may be the only way to achieve high occupant restraint use rates among this typically non-compliant age group.

Other automatic protective devices involves design of vehicles, roads, protective sports gear, etc. These concerns require a larger effort than local initiatives. However, Iowa has active research in injury prevention underway at both the University of Iowa and Iowa

State University.

A number of serious injuries and deaths are related to sports and recreational activities. While the majority of sports related injuries involved the musculoskeletal systems, some collision/contact sports injuries involve the central nervous system. There is direct evidence of brain damage in sports where repeated blows to the head are common, such as in boxing and football. Furthermore, it is known that the effects are cumulative and may result in permanent structural changes to the brain.

Systematic documentation of sports injuries in general and sports related brain injuries in particular have been limited. The tendency has been to report the fatal and severe injuries while ignoring the effects of mild yet significant injury to the brain which can result in disability, considerable medical care costs and lost productivity. Concussions which may cause serious disabilities may never reach the attention of a physician or skilled health care professional.

PREVENTION Action Plan

Develop a structure for the coordination of prevention activities.

Ongoing objectives

1. Maintain active membership with the Prevention of Disabilities Policy Council.
2. Maintain active membership with the Disability Prevention Advisory Committee, within the Iowa Department of Public Health.

Develop a legislative agenda which addresses additional laws and regulations needed to prevent traumatic brain injury and fatalities.

Ongoing objectives

1. Develop and publish position statements on proposed state and federal legislative efforts. (e.g. helmet use, back seat passenger restraints, etc.)
2. Coordinate legislative priorities with other state agency organizations (i.e. Department of Natural Resources - implied consent and Department of Transportation - helmet usage)

Identify funding for prevention education activities.

FY 1993-1994

One-Year Objectives

1. Identify funding sources within federal, state and local government.
2. Identify funding sources in private sector.

Second-Year Objectives

1. Publish materials identifying funding sources for head injury prevention activities, and distribute through the Council.

Increase knowledge about automatic protection devices.

FY 1994

Ongoing objectives

1. Gather information about prevention research at state and federal levels.
2. Provide information on automatic protection devices to general public.

Second-Year Objectives

1. Publicize, through newsletter, research efforts within state universities.
2. Support research efforts within state universities.
3. Refer inquiries to appropriate sources of automatic protection devices.

Inform the public of the causes and rehabilitation of head injuries in Iowa.

Ongoing objectives

1. Continue publishing articles in newsletters, press releases, and informational material.
2. Establish a resource library with literature and audio-visual materials.

3. Develop and disseminate material regarding the incidence and causes of head injury.
4. Develop programs to promote head injury awareness through activities during "National Head Injury Awareness Month".
5. Encourage inclusion of head injury safety issues in conjunction with other safety initiatives.
6. Provide technical assistance on rehabilitation centers available in Iowa, regionally, and nationally.

ELEMENT 2: CENTRAL REGISTRY FOR BRAIN AND SPINAL CORD INJURIES

In 1987, the General Assembly passed and Governor Branstad signed into law legislation creating the Central Registry for Brain and Spinal Cord Injuries. Iowa Code 135.22 requires that hospitals and physicians report head and spinal cord injuries to the registry. Compliance is still problematic although improving. This information facilitates the identification of appropriate rehabilitative services, which allows state and local policy makers to make informed decisions. The Registry will allow the state to identify high risk populations and circumstances in order to formulate preventive intervention strategies. The responsibility for the registry currently resides in the Division of Health Protection within the Iowa Department of Public Health. Hospital compliance has increased to 83% in 1991 from 60% in 1990. The registry is currently funded through the Centers for Disease Control.

CENTRAL REGISTRY FOR BRAIN AND SPINAL CORD INJURIES Action Plan

Expand information collected on Central Registry for Brain and Spinal Cord Injuries reporting form.

FY 1993-1994

First- through Second-Year Objectives

1. Develop and recommend an expanded reporting form to include: identification

of substance use, blood alcohol levels, method of transportation, race, etc. By July 1, 1992.

2. Support the National Committee on Vital and Health Statistics recommendations that E-codes be included as part of the Uniform Hospital Discharge Data Set. Indefinite

Increase number of sources reporting to Central Registry for Brain and Spinal Cord Injuries.

FY 1993-1994

First- through Second-Year Objectives

1. Identify new public and private sources to report to the registry by July 1, 1992.
2. Work with CRBSCI to incorporate new reporting sources into the registry by July 1, 1993.

Improve compliance to Central Registry for Brain and Spinal Cord Injuries

FY 1993-1996

First- through Second-Year Objectives

1. Identify hospitals currently not reporting by July 1, 1992.
2. Establish communication with individual hospitals, as well as Iowa Hospital Association, to increase reporting of head injuries requiring hospitalizations to 93% by July 1, 1993.
3. Explore electronic transmission of incidence reports.

Third-Year Objectives

1. In addition to reporting head injuries requiring hospitalizations, work with hospitals as well as Iowa Hospital Association, to report all head injuries regardless of severity by July 1, 1994.

Third- through Fourth-Year Objectives

1. Work with Iowa Medical Association to encourage physicians to report all head injuries to Central Registry for Brain and Spinal Cord Injuries by July 1, 1995.

ELEMENT 3: MEDICAL REHABILITATION SERVICES

Medical technology has advanced significantly resulting in hundreds of persons with brain injury surviving and returning to the community. The escalating survival rate has resulted in a need for an increased use of existing services as well as the creation of new services. Emergency medical treatment and immediate transportation to a trauma center are critical and may reduce complications of a brain injury.

A head injury is traumatic and unexpected in nature. The complexity of a head injury impacts nearly all aspects of a person's life, often resulting in a permanent disability. Three major systems may be affected: cognitive, physical, and social. A variety of services are required, delivered by professionals with the expertise, to treat and define head injury rehabilitation. Therefore, head injury rehabilitation involves a interdisciplinary team approach.

The Council conducted a preliminary survey in Iowa to see how many service providers said they had a head injury program. These results will enable the Council to conduct an in-depth survey of these programs to determine what specifically is offered. Additionally, a family survey was conducted to get a sense of the families satisfaction with services received.

MEDICAL REHABILITATION Action Plan

Determine roles of existing state agencies in providing direct and indirect services.

FY 1993-1994

First- through Second-Year Objectives

1. Identify state supported programs currently available to persons with head injury, by July 1, 1992.
2. Review eligibility criteria of identified programs.

3. Publish materials identifying state agency programs and eligibility criteria, by July 1, 1993.

Inform public of available rehabilitation services.

FY 1993-1994

Ongoing Objectives

1. Provide information and coordinate information on the continuum of services available for persons with head injury to an information and referral systems (i.e. Iowa Compass, etc.), to assure current and accessible information.

First-and Second-Year Objectives

1. Publish and disseminate a comprehensive list of suggested questions for families to use when selecting a service provider.
2. Publish material identifying all rehabilitation services for persons with head injuries, utilizing current data.

Promote coordination of services.

Ongoing objectives

1. Publish and update materials for head injury professionals on the identified services available, so individuals may reach their optimal level of independence and potential.

Develop quality assurance in service provision.

FY 1993-1997

First-Year Objectives

1. Research various standards (i.e. CARF, JCAHO, etc.) by July 1, 1993.
2. Develop proposed standards by December 1, 1993.

Second-through Third-Year Objectives

1. Promote a professional review of proposed standards by July 1, 1994.

2. Establish service provision standards by December 1, 1995.
3. Publish and disseminate service provision standards by April 1, 1996.

Fourth-Year Objectives

1. Encourage service providers to adopt standards by December 1, 1996.
2. Support legislative efforts to establish licensure for a head injury service provider by December 1, 1996.
3. Support efforts to reinstate trauma center designation by June 1, 1997.

Fifth-Year Objectives

1. If licensure is passed, work with the Iowa Department of Inspection and Appeals to require providers to meet criteria for licensure by December 1, 1997.
2. Support efforts to require BI designation prior to receipt of federal funding by July 1, 1997.

Assess service provision in the private sector.

FY 1993-1995

One- through Third-Year Objectives

1. Using preliminary data, survey identified head injury service providers in the private sector to determine the type and extent of services offered.
2. Using preliminary family data, identify gaps in service.

Study the Emergency Medical Services system.

FY 1993-1994

First-through Second-Year Objectives

1. Identify EMS training needs as they pertain to head injury.
2. Identify funding sources for equipment and training.
3. Address identified service needs.

Monitor rehabilitation programs around state.

FY 1993-1996

First-Year Objectives

1. Identify needed rehabilitation programs by December 1, 1993.

Second-through Third-Year Objectives

1. Assess the need for and cost benefit of identified services by July 1, 1993.
2. Identify potential funding sources for identified services by July 1, 1995.

Fourth-Year Objectives

1. Locate and identify potential service providers by June, 1996.

ELEMENT 4: COMMUNITY SERVICES

Although medical technology has improved and more persons are surviving head injuries, these efforts may be futile if extended therapies and community based services are inadequate.

Substance abuse is a major cause of head injuries. Recent research indicates that alcohol is involved in over 50% of all head injuries. The incidence of second head injury is high among individuals who return to alcohol use. Cognitive deficits are worsened with the use of alcohol, according to national research.

Community services has proven to be highly beneficial, and more appropriate than institutionalization, to many special needs populations. These community services have been accessible to these individuals through medicaid waivers. If Iowans with head injuries were able to utilize a waiver program, the costs of institutionalization may be reduced.

It is imperative that vocational services be included in the spectrum of community services. These services may consist of a menu of individualized activities(e.g. evaluation, job preparation, counseling and guidance, job placement, etc.) needed to assist the person with a head injury to achieve independence and employment goals consistent with their potential.

COMMUNITY SERVICES Action Plan

Promote vocational services.

1993-1995

Ongoing Objectives

1. Increase accessibility and awareness of existing vocational services for individuals with head injuries and improve methods to gain such services.
2. Examine and support funding sources available in Iowa to provide appropriate vocational services to individuals with head injuries.

Develop a case management system for public and private sector service providers.

FY 1993-1995

One- through Three-Year Objectives

1. Assess the need for and cost benefit of case management services.
2. Identify potential funding sources for case management services.
3. Provide training to existing state agency case managers working with persons with head injuries.
4. Continue to provide information and referral services to state agencies and target case managers.

Develop community based residential programs.

FY 1993-1997

First- through Five-Year Objectives

1. Identify residential needs in communities. (i.e. supervised living, semi-independent, and independent living) by December 1, 1993.

2. Identify costs associated with residential living.
3. Locate and identify potential resident providers.
4. Assist providers in locating funding.

Promote medicaid waivers.

FY 1993-1997

First- and Second-Year Objectives

1. Work with Department of Human Services in determining eligibility for head injury clients.
2. Research medicaid waivers in other states presently serving persons with head injury.

Second- through Third-Year Objectives

1. Assist the Department of Human Services with development of policy in regards to appropriate services for persons with head injuries.

Fourth- and Fifth-Year Objectives

1. Assist the Department of Human Services in identifying potential providers for approved services.

Provide information on rights and responsibilities under the American with Disabilities Act.

FY 1993-1995

1. Educate people with head injuries about laws protecting their rights as workers through forums, workshops, and newsletters as well as individual consultation.
2. Collaborate with other disability groups to inform public of rights and responsibilities.

ELEMENT 5: STAFF TRAINING AND PUBLIC EDUCATION

Education and training in the management of head injury rehabilitation is inadequate, however, the demand for professionals continues to grow. A wide variety of professionals need to be educated/trained in the needs of persons with head injuries. Some examples of the types of disciplines utilized are as follows: physiatry, speech pathology, physical therapy, occupational therapy, cognitive therapy/education, and vocational rehabilitation counseling.

STAFF TRAINING AND PUBLIC EDUCATION Action Plan

Continue to provide technical assistance for staff providing direct services.

Ongoing objectives

1. Continue to provide technical assistance to train professional staff. (i.e. education, nurses)

Expand training opportunities for indirect service providers.

Ongoing objectives

1. Identify providers in need of training.
2. Publish information for use in training staff.
3. Participate in training as requested.

ELEMENT 6: FAMILY FINANCIAL SUPPORT

Although many survivors of head injury may be able to return to their families and/or communities, some individuals will need extended rehabilitative/habilitative services.

The financial resources available to individuals with head injury may include coverage through Medicare/Medicaid, standard health insurance companies, health maintenance organizations (HMO), governmental health care programs, as well as insurance contracts. However, these resources are inadequate to cover the devastating costs associated with brain injuries. Families are often left near destitute.

A significant issue to be addressed is the number of lowans who are uninsured or underinsured. Many insurance policies do not begin to cover the catastrophic costs associated with brain injuries; consequently, leaving the injured person with inappropriate or no rehabilitative services at all.

FAMILY FINANCIAL SUPPORT Action Plan

Identify financial assistance programs.

FY 1993

First-Year Objectives

1. Identify local, state, and federal financial sources.
2. Publish and disseminate list of financial sources with general eligibility requirements.

Review medicaid eligibility.

FY 1994

Two-Year Objectives

1. Participate in formation of a revolving fund, to release patients from an acute care setting into rehabilitation, while awaiting medicaid eligibility.

Examine insurance for persons with head injuries.
FY 1993-1995

First- through Three-Year Objectives

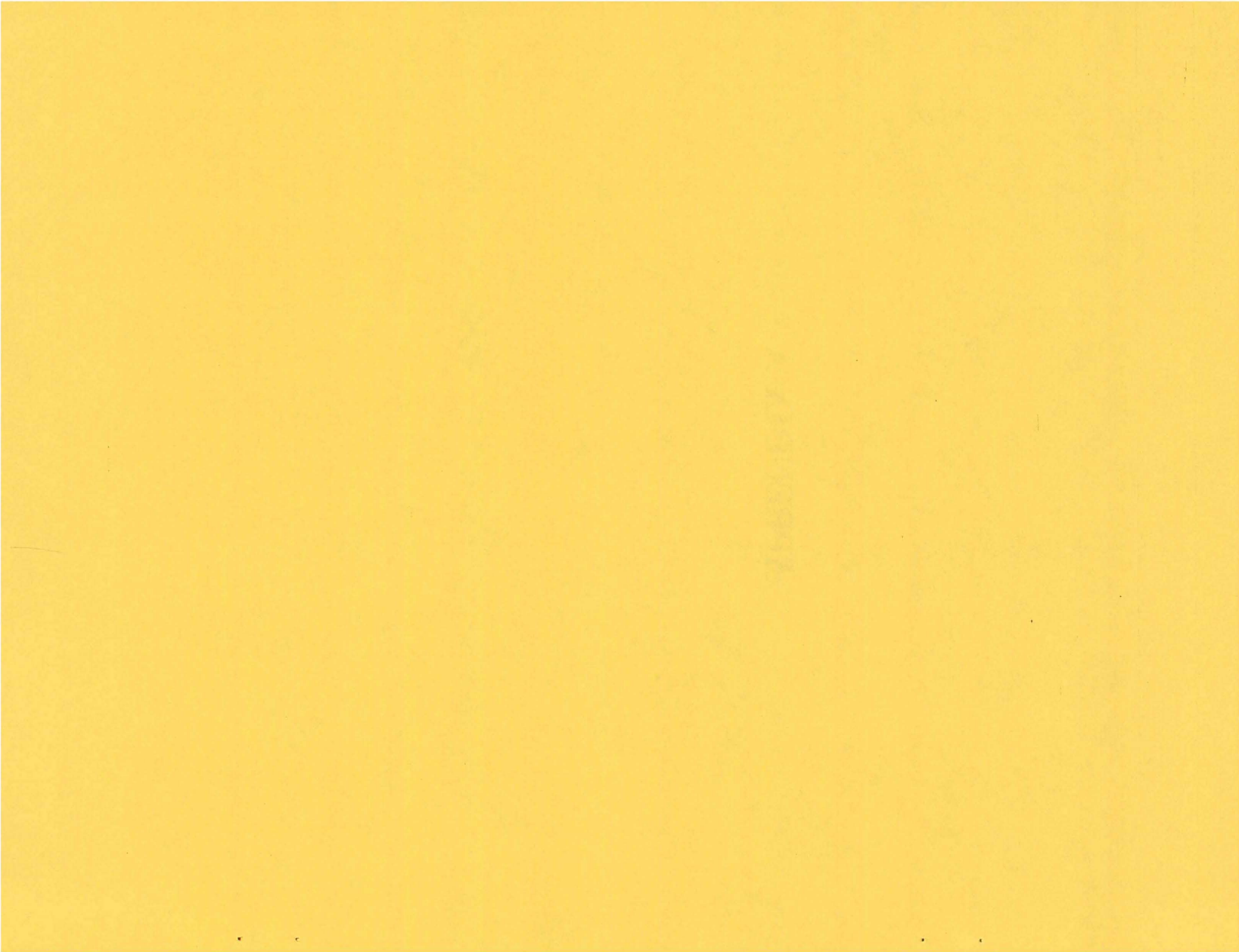
1. Collaborate with the Iowa Insurance Commission to identify insurance available to individuals with head injuries.

Develop alternative funding sources.

Ongoing objectives

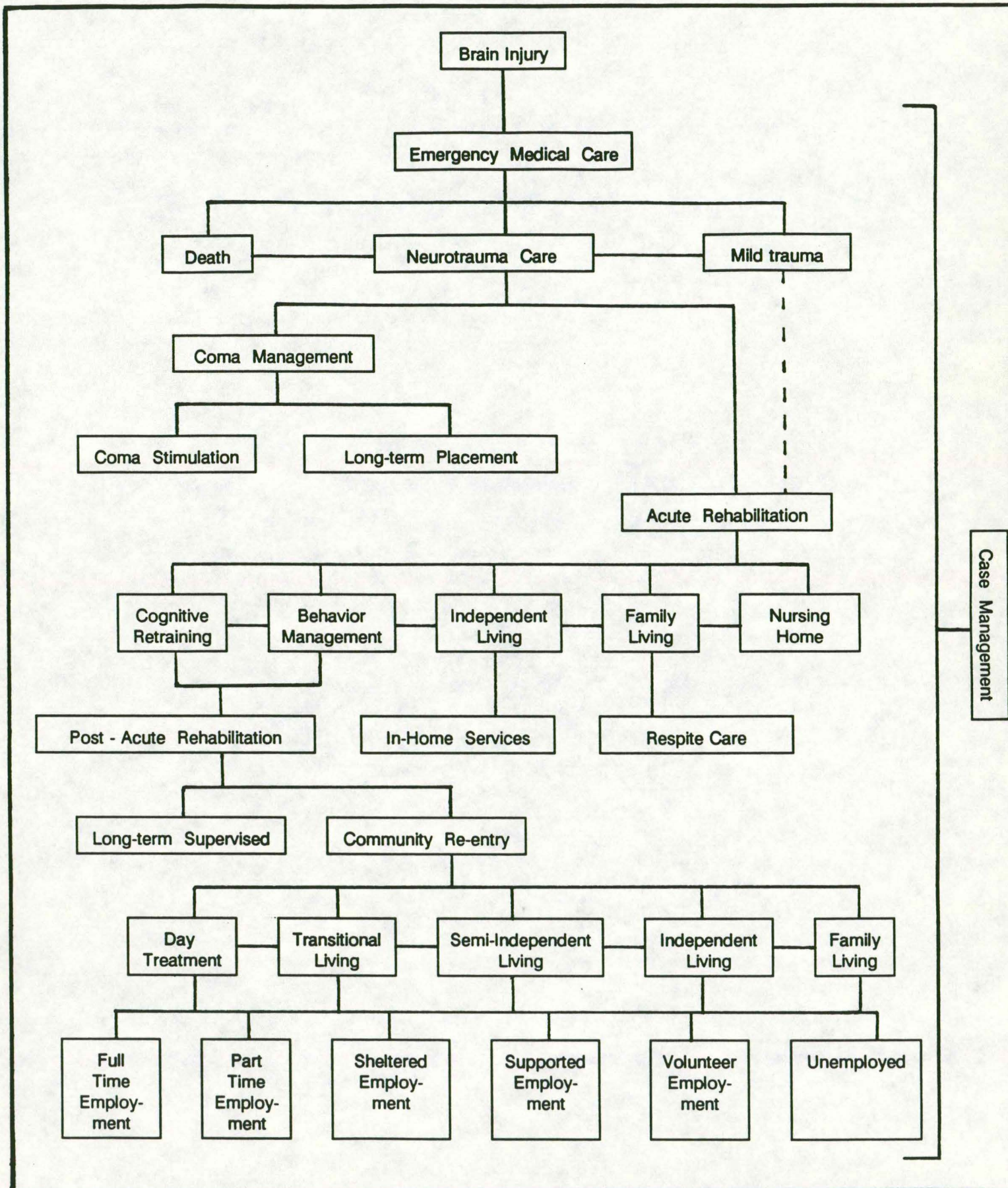
1. Identify alternative funding sources in other states and assess possible applicability for Iowa.
2. Initiate/support legislation as needed.

APPENDIX A



1992 MODEL SERVICE DELIVERY SYSTEM for Individuals with Brain Injury

Prevention



APPENDIX B



Glossary

Acute Rehabilitation - This emphasizes intense physical and mental restorative services in the early months after traumatic brain injury, as soon as patients are medically stable and discharged from acute care. Program is medically based with an identifiable team. Relatively short term (3 to 4 months) but much longer stays are not unusual.

Advocacy Services - The process by which beneficial change is promoted through individual and family empowerment, systems change, and private/governmental initiatives. The process may include individual or organizational efforts and/or coalition building.

Aphasia - Loss in ability to speak coherent ideas or understand spoken language.

Apraxia - Loss of ability to carry out habitual movement of acts that were previously automatic.

Art Therapy - Use of art techniques such as painting, crafts and group activities to develop motor skills, perceptual abilities and self-esteem.

Ataxia - Dysfunction in motor coordination and balance.

Audiologist - One who evaluates hearing impairments and who aids in the rehabilitation of those who have such impairments.

Behavior Management Services - Specially designed services to assist the person with traumatic brain injury who cannot control his or her destructive behavior, sexual aggression, and/or other severely maladaptive or aggressive behavior.

Case Management - The process of planning, organizing, coordinating, and monitoring the services and resources needed to respond to an individual's needs.

Cognitive Therapy - Learning that is concerned with acquisition of problem solving abilities and with intelligence and conscious thought.

Coma - A state of decreased responsiveness to external stimuli in which person is unawake and unaware.

Coma Treatment Services - After patient is medically stable, use of sensory stimulation in an effort to enhance a person's responsiveness to external stimuli. Coma stimulation is frequently a combined effort by personnel in the areas such as physical, occupational, speech therapy, nurses and family.

Confabulation - An individual may fabricate ideas that are partly or completely false, due to a combination of confusion, forgetfulness, and unwillingness to appear impaired. Some

real or formerly understood information may be incorporated into a story that the person truly believes.

Consulting Physicians - A variety of other physician specialists may be asked to consult, recommend, or treat patient. They may be specialists in orthopedic, cardiovascular, or other areas.

Day Programming - Day programs designed to maintain and/or enhance gains attained in treatment and in social integration. Non-residential setting with intervention across all disciplines.

Dysphasia - An impairment of speech, not as severe as aphasia, usually the result of an injury to the speech area in the cerebral cortex of the brain.

Education Services - Those activities by which a state organization provides outreach education of the public, professionals, survivors of traumatic brain injury, their families, and interested persons through conferences, workshops, symposiums, in-service training, seminars, retreats, support groups, and so on.

Emotional Lability - Inappropriate and/or exaggerated laughter or crying due to a loss of emotional control may relate to a damaged limbic system. or frontal lobes of the brain.

Family to Family - The provision of support and understanding to families experiencing the initial impact of traumatic brain injury in the medical environment.

In-Home Services - A variety of "in-home" services may include professional home bound programs, domestic assistance, financial advising, personal care attendants, and so on.

Independent Living - Community based services to maximize an individual's ability to empowered and self-directed. Allows person to live in his/her own home with maximum personal control over how services are delivered, combined with the opportunity to work as much as possible.

Individual Service Providers - Therapies, counseling, service coordination, and so on are provided on an individual basis by professionals who are not practicing under the auspices of an organized service agency.

Information Services - The process and programs by which a state organization acts as a resource to develop and disseminate information relative to TBI and its consequences.

Lifelong Living - Primary emphasis is for persons discharged from rehabilitation who need ongoing lifetime support. Structured activities are provided on both an individual and group basis usually in a residential or skilled nursing environment.

Long-Term Rehabilitation Services - A full range of long-term rehabilitation and care services are provided. A usual criteria for length of stay is demonstrated continued improvement.

Movement Therapy - Using bodily expression, dance, and exercise to facilitate movement, self-expression and self-esteem.

Music Therapy - Use of music and singing to develop language and movement skills.

Neurosurgeon - This individual is the key doctor and coordinator in the emergency trauma treatment. He or she must have full control of the patient, being ready to intervene, with brain surgery if necessary, at any time. This doctor usually follows the patient through the acute phase.

Neurologist - After the Emergency phase has past, evaluation of neurological status and medical management of brain disorder becomes the responsibility of the neurologist. Evaluation and reevaluations constantly monitor the patient's recovery. The neurologist frequently follows the patient beyond the hospitalization period, especially for seizure control.

Neuropsychologist - Clinical evaluation of brain functions as reflected in behavior and emotions is the specialty of this psychologist. He or she may consult with other therapists and the family, and may conduct a variety of therapies to aid both the patient and the family with the psychological adjustment to trauma.

Nutritionist/Dietician - Proper diet is essential for maximum recovery of the brain and body. This specialist knows foods, nutrition, and proper weight control, and can also help patients and families develop good post-hospital diet plans.

Occupational Therapist - Using the body to accomplish the familiar activities of daily living is the responsibility of the occupational therapist. Evaluation and treatment for regaining the use of fingers and hands, eye-hand coordination, self-care skills, eating, bathing, and learning numerous other functional skills requires knowledge and application of how the brain directs the body to carry out practical tasks. Helps the patient return to gainful employment.

Physiatrist - A physician specializing in physical medicine and rehabilitation often takes over primary care when the patient moves into a rehabilitation facility, but he or she may be called in to consult very early, particularly when other physical injuries are apparent. He or she is concerned with evaluating and treating the impact of traumatic brain injury on the physical functioning of patients body. This physician usually directs and coordinates rehabilitation services in hospitals and is a specialist in the physical retraining of the body.

Physical Therapist - This individual focuses on restoring purely physical use of the body to as high a level as possible. Teaching walking, posture, balance, endurance, strength, and coordination involves a complex program of skillfully designed exercises consistent with the physical and neurological potentials of the patient.

Post-Acute Rehabilitation - Extended therapies are provided in a structured environment for individuals with brain injury. These services may include cognitive training, speech rehabilitation, memory training, work on skills of daily living, restructuring lost social behaviors, continued physical therapy, pre-vocational and vocational training, recreational therapy, and community re-entry programs. Patients typically remain as long as they are making progress. Not necessarily hospital based but with an identifiable team.

Prevention Services - Those activities and programs which seek to reduce or eliminate factors linked with the onset of a traumatic brain injury.

Psychiatrist - A physician who specializes in mental health is often called upon to evaluate problem behaviors and adjustment, particularly when medications can help. The psychiatrist is also a psychotherapist and may help the patient or the whole team in more effective behavioral management of the patient.

Rehabilitation Psychologist - Evaluation of and counseling for adjustment to the physical and mental changes brought about by head injury is the special task of this psychologist, who understands the effects of bodily characteristics and change on mental state.

Rehabilitation Nurse - A nurse who cares for the patient on a moment-by-moment basis and coordinates routine daily activities, including carrying out the doctor's medical management orders, attending to the patients's needs, and monitoring his or her physical and neurological health. This specialist is often the coordinator of several health and social services for the patient and family.

Recreational Services - Camps, activities groups, and so on, may be organized to assist the person with traumatic brain injury to make constructive use of leisure time form a social support system, and learn leisure activity skills.

Respite Services - A variety of services may be organized for the specific purpose of providing respite care to permit the families of persons with traumatic brain injury the opportunity for activities other than care and monitoring. These services may be in the form of care personnel coming into the home or the person with traumatic brain injury going to a day program or into a residential program.

Semi-Independent Living Services - A service where the person with traumatic brain injury lives in either a group home or arranged quarters with a caretaker(s) who monitors daily activities and provides care as needed.

Sexuality Counselor - Uses supportive techniques and special methods to help the person with a head injury and family deal with special and intimate relationship issues.

Social Worker - This professional is often the link between the patient/family and virtually all of the other care providers, as well as with the "outside world". The social worker may help resolve financial concerns, obtain rehabilitation equipment needed at home, provide emotional support for the family, and link the movement of the patient from facility to facility and eventually to home. The social worker is often the "case manager".

Specialized Education and Educational Support Services - Designated programs within schools, colleges and universities that provide special instruction and support services for persons who have sustained traumatic brain injury.

Speech Language Pathologist - Restoring language and thinking or intellectual skills is the specialty of the speech and language pathologist and cognitive therapist. Motor-speech, reading, hearing, and talking are retrained by involvement in graded programs, to strengthen conversational and other communication skills and to further develop higher level cognitive skills. These goals are geared toward reintegration of the patient into the family and community.

Supported Employment - Gainful employment opportunities complemented or supported through the provision of a job coach/trainer or aide that can be time unlimited in scope.

Transitional Living Services - Community based services within a group home or facility that coordinates referrals, provides caretakers, monitors activities, etc. Assists individuals to increase personal self-determination, and to increase independence. Focuses on compensating for skills that cannot be restored. Typical length of stay 4-18 months.

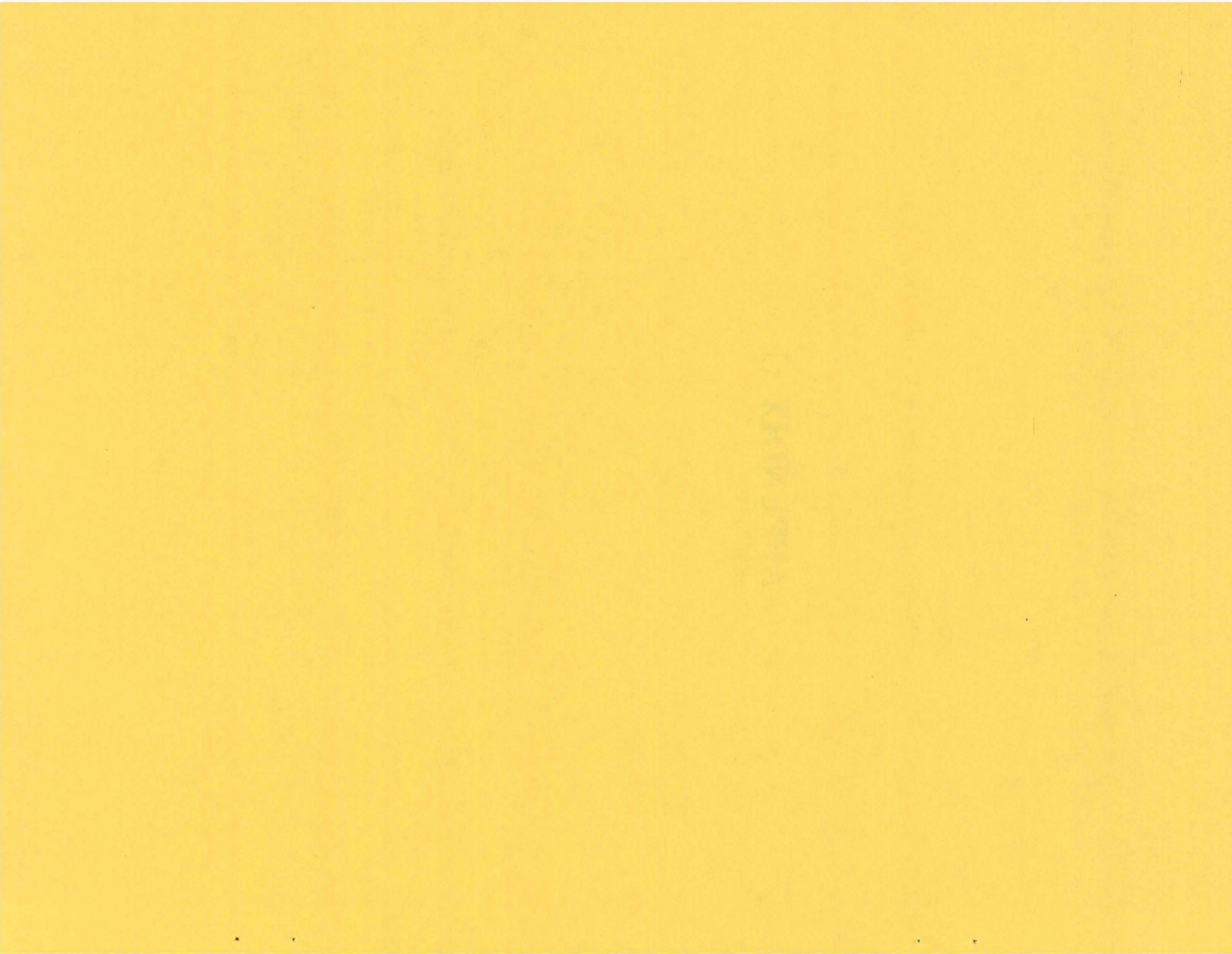
Transportation Services - Transportation is furnished to the person with traumatic brain injury and/or his or her family.

Verbosity - Inability to control the amount of talking, sometimes, rambling a great deal, usually reflects an ineffective attempt to gain attention, to appear intelligent, or merely to avoid the fear of feeling left out.

Vocational Services - An array of community based services provided by public and private sectors. These services may consist of a menu of individualized activities (e.g. evaluation, job preparation, job coaching, supported employment, counseling and guidance, job placement, etc.) needed to assist the person with a head injury to achieve independence and employment goals consistent with their potential.

Volunteer Services - Either lay or professional persons perform a variety of services and assistance on a non-paid basis.

APPENDIX C



Voting Members

Jo Ann C. Kramer, M.A., Waterloo, is chairperson of the Iowa Advisory Council on Head Injuries. She is the founder of the Iowa Head Injury Association, and is a Special Education Consultant with Area Education Agency #7. She has a daughter who has sustained a traumatic brain injury.

Patricia L. McCollom, RN, MS, CRRN, CIRS, Johnston, is the vice chairperson of the Council, and is the chairperson for the Service Provision task force. She is the President and Senior Rehabilitation Consultant for Management Consulting and Rehabilitation Service, Inc. and is a board member emeritus of the Iowa Head Injury Association - Central Area Group.

John D. Bayless, Ph.D., Iowa City, is the secretary of the Council, and is on the Service Provision task force. He is a Neuropsychologist providing consulting and rehabilitation counseling services to brain injury, neurology and psychiatry units in several Iowa hospitals, and the Vice-President of the Iowa Head Injury Association - East Central Group.

Julie Davis, Sioux City, is on the Service Provision task force. She is employed by Social Security Administration. She is active in providing awareness of programs available for disabled children and adults.

Charles F. Denhart, M.D., Johnston, is on the Prevention task force. He is a physiatrist who specializes in the area of physical medicine and the rehabilitation of people with head injuries. He is a board member of the Iowa Head Injury Association - Central Area Group.

James C. Hardy, Ph.D., Iowa City, is on the Service Provision task force. He is a Professor and Director of Professional Services in the Division of Developmental Disabilities at the University of Iowa.

Delbert L. Jensen, St. Ansgar, is on the Prevention task force. He is the former Superintendent of schools in St. Ansgar and is a board member of the Iowa Head Injury Association - North Central Group. He received a traumatic brain injury in 1986.

Judith L. Leaming, Des Moines, is on the Service Provision task force. She is employed at Des Moines Public Schools, and attended Drake University. She is the spouse of a man with a head injury.

Mark Louviere, Waterloo, is on the Prevention task force. He is a Family Physician in solo practice.

Marvin L. Tooman, Ed.D., Ankeny, is on the Service Provision task force. He is the Chief Executive Officer of On With Life, Inc. He is a board member of the Iowa Head Injury Association - Central Area Group.

Carol A. Watson, Ph.D., Iowa City, is chairperson of the Prevention task force. She is the Associate Administrator of Patient Care Services of Mercy Medical Center in Cedar Rapids. She is the Director of Prevention for the Iowa Head Injury Association, and was appointed to serve on the Prevention of Disabilities Policy Council.

Albert F. Wiuff, Ankeny, is on the Prevention task force. He is a General Contractor and is President of the Elview Company. He has a daughter who had a brain tumor.

Ex-Officio Members

Christopher Atchison, Des Moines, is on the Prevention task force. He is the Director of the Iowa Department of Public Health.

Almo Hawkins, Des Moines, is the Director of the Iowa Department of Human Rights.

William Lepley, Des Moines, is on the Prevention task force. He is the Director of the Iowa Department of Education.

David Lyons, Des Moines, is on the Service Provision task force. He is the Commissioner of the Insurance Division, within the Iowa Department of Commerce.

Chuck Palmer, Des Moines, is on the Service Provision task force. He is the Director of the Iowa Department of Human Services.

Creig Slayton, Des Moines, is on the Prevention task force. He is the Director of the Iowa Department for the Blind.

Jerry Starkweather, Des Moines, is on the Service Provision task force. He is the Administrator of the Division of Vocational Rehabilitation, within the Iowa Department of Education.

Frank Vance, Des Moines, is on the Prevention task force. He is the Chief of the Bureau of Special Education within the Iowa Department of Education.

Ex-Officio Representatives

Larry Allen, Altoona, is on the Service Provision Task Force. He is a Management Analyst in the Division of Mental Health/Mental Retardation/Developmental Disabilities in the Iowa Department of Human Services.

Ruth Burrows, Des Moines, is on the Service Provision Task Force. She is an Assistant Chief in the Client Services Bureau of the Division of Vocational Rehabilitation, within the Iowa Department of Education. She is a board member of the Iowa Head Injury Association.

Roger Chapman, Des Moines, is on the Prevention Task Force. He is the Program Manager for Disability Prevention Program in the Division of Health Protection within the Iowa Department of Public Health.

Bonnie Linquist, Des Moines, is on the Prevention Task Force. She is a Vocational Rehabilitation Supervisor and is the Facility Specialist for the Iowa Department for the Blind.

Steve Maurer, Des Moines, is on the Prevention Task Force. He is a Consultant for the Severely and Profoundly Handicapped for the Bureau of Special Education within the Iowa Department of Education.

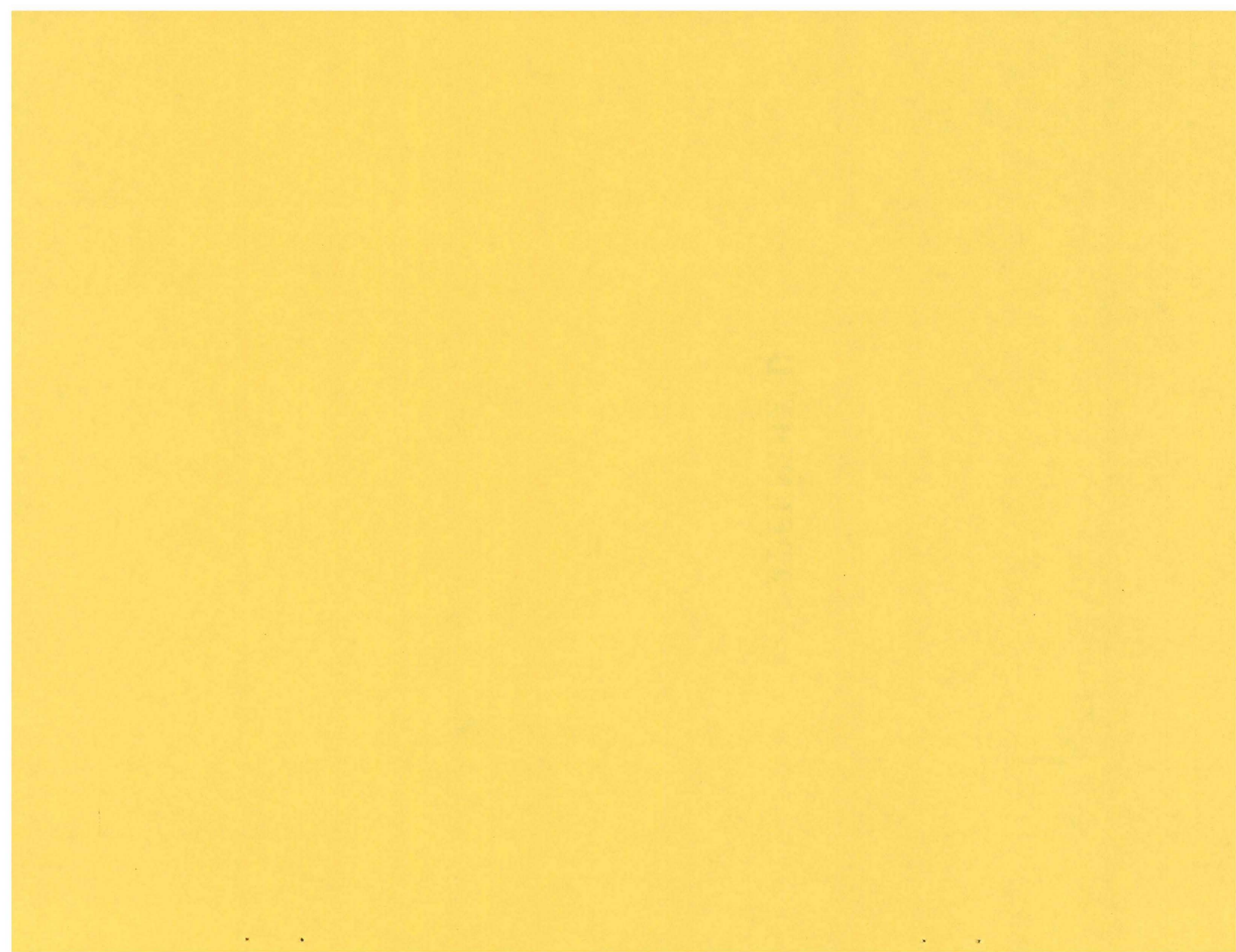
Dan Winegarden, Des Moines, is on the Service Provision Task Force. He is the First Deputy Commissioner for the Division of Insurance within the Iowa Department of Commerce.

Staff

Cheryl Corneliussen, Des Moines, is a Consultant in the Division of Persons with Disabilities, within the Iowa Department of Human Rights, and is the staff person assigned to the Council.

Donald Westergard, Des Moines, is the Administrator of the Division of Persons with Disabilities, within the Iowa Department of Human Rights, to which the Council is administratively assigned.

APPENDIX D



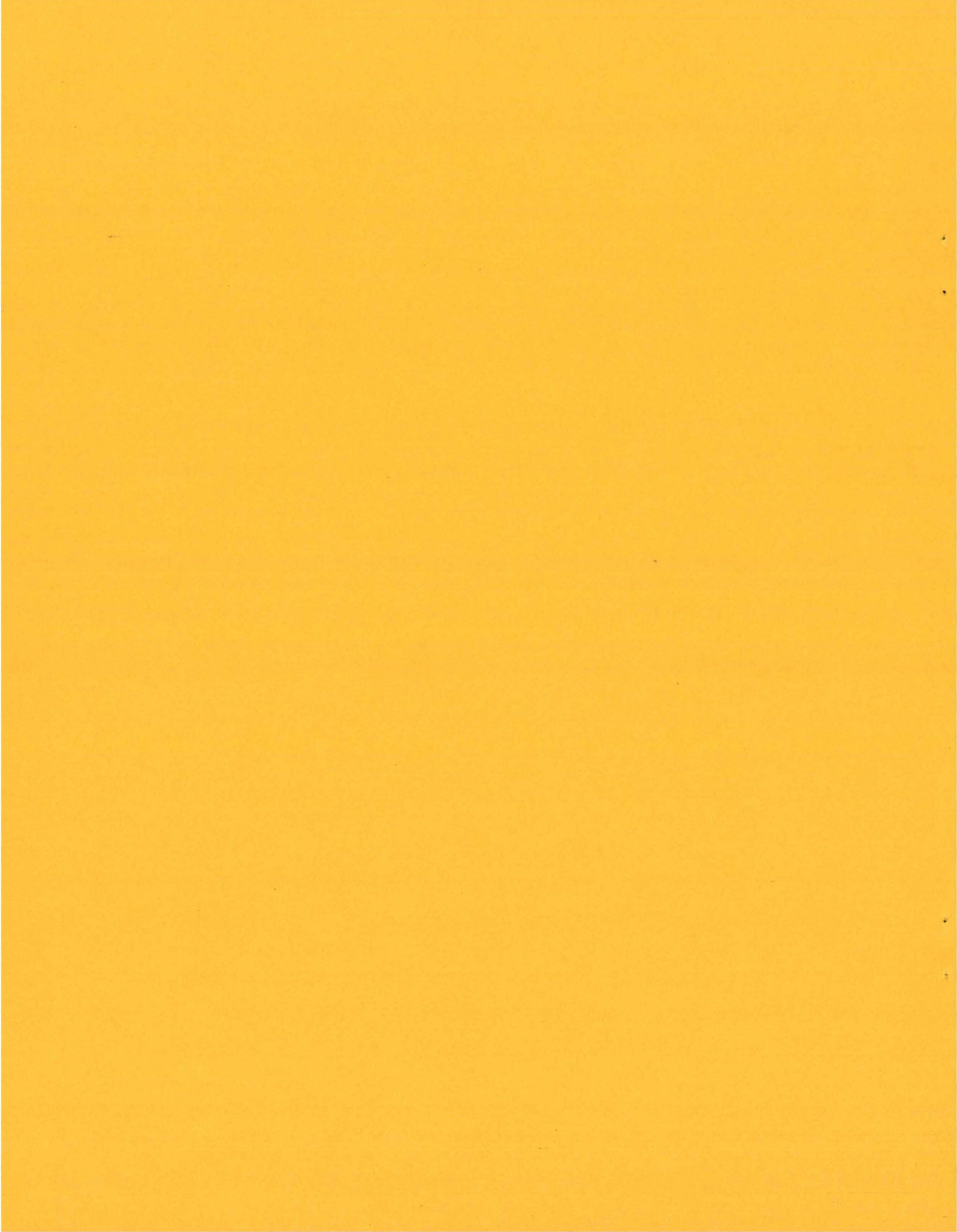
Extended Task Forces

Prevention

Sergeant Frank Fisher, Iowa Highway Patrol - Community Safety Officers
Shirley Jones, Iowa Department of Public Health - Farm Safety
Tim Lane, Iowa Department of Public Health, Division of Adolescent Health
Neil Longseth, Iowa Safety Council
Bill Maddex, Iowa Division of Labor - Bureau of Consultation and Education
Mary Ann Mickelson, Iowa Department of Transportation
John Patramanis, Iowa Department of Employment Services, Bureau of Labor
Karon Perlowski, Governor's Planning Council on Developmental Disabilities
Dr. Tim Peterson, Iowa Methodist Medical Center, Injury Research Program
Bob Rousch, Iowa Department of Education, Curriculum Consultant
Terry Voy, Iowa Department of Education, School Bus Safety
Douglas Woolf, AAA Motor Club of Iowa
University of Iowa, Department of Preventive Medicine and Occupational Health

Service Provision

Cathie Conway, Management Consulting & Rehabilitation Services, Inc.
Dr. Lawrence Fuortes, University of Iowa - Occupational Health Service
Carol Lane-Hill, Younkers Rehabilitation - Life Quality Center
Dr. William McMordie, Iowa Methodist Medical Center
Sue Whitehead, Farmland Insurance



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