Welcome to On With Life. We are excited to have you on board!

# ON WITH LIFE STUDENT HANDBOOK





#### Welcome to On With Life!

We are pleased to have you join this wonderful organization and as a student intern! On With Life is a very special organization which is centered on our mission:

"Joining hands, hearts, and minds to help persons living with brain injury get "On With Life!"

On With Life was started by a small group of families and survivors who came together in the early 1980's to support each other. By this time, many individuals began to survive moderate to severe traumatic brain injury, but there were no specialty services outside a hospital setting dedicated to meeting their unique needs. What began as a dream soon became reality for these eight families in 1987. Our name comes from one of the survivors, a 28-year old motocross racer, who kept saying "I just want to get on with my life."

From this humble beginning, On With Life has grown into four separate corporations with over 200 staff members. We have served over 2,500 individuals and continue to expand our continuum to meet the wide-ranging, lifelong needs of persons living and aging with brain injury. Our current services include: Post-Acute Inpatient Rehabilitation, Long-Term Skilled Care, Supported Community Living, Outpatient Neuro Rehabilitation, Neuropsychology Evaluation and Consultation, and The Apartments at OWL Creek/Independent Living.

This handbook is intended to provide you with some brief information about our philosophy, brain injury and treatment, learning objectives, and general policies.

# ON WITH LIFE

Post-Acute Inpatient Rehabilitation Long-Term Care for Youth and Younger Adults Outpatient Neuro Rehabilitation Supported Community Living Neuropsychological Evaluation and Consultation The Apartments of OWL Creek/Independent Living







# ABOUT US

We are On With Life, a non-profit organization and a Midwest leader in brain injury rehabilitation. We began as the dream of a dedicated, passionate group of survivors and their families, faced with the challenge of rebuilding lives shattered by brain injury. They envisioned a program that would provide rehabilitation services to persons living with brain injury.

Since opening in 1991, we have served more than 3,000 individuals and their families. Our goal at On With Life is to exceed the expectations of persons served and their families. We believe our extensive rehabilitation services, combined with specialized expertise in brain injury rehabilitation, offer individuals the optimal opportunity to achieve their goals.

We are proud to provide a continuum of specialty services for individuals who have sustained a traumatic brain injury, stroke, tumor, aneurysm or other neurological condition. As specialists in brain injury rehabilitation, we know that each injury is unique, with specific needs, capabilities and potential. Therefore, each person served has a treatment plan that is tailored to their needs and is created uniquely for them.

#### POST-ACUTE INPATIENT REHABILITATION

The On With Life Post-Acute Inpatient Rehabilitation program is one of only a few programs in the world, outside of a hospital, to be accredited as a "Comprehensive Integrated Inpatient Rehabilitation Program – Brain Injury" by CARF (the Rehabilitation Accreditation Commission).

Individuals participating in our intensive rehabilitation program, including those in a minimally responsive state, receive an average of three or more hours of therapy a day and 24-hour skilled nursing services provided at the strongest ratio of nursing hours per person served of any setting outside of a hospital/institution in Iowa. Our Inpatient program has served more than 1,500 individuals with complex cognitive, sensory and medical needs. After participating in this comprehensive specialty program, a majority of persons served return to their homes and communities. Program services include:

- Physical Therapy
- Occupational Therapy
- Speech Therapy
- Therapeutic Recreation
- Music Therapy
- Peer Mentoring
- Neuropsychology

- Rehabilitation Nursing
- Medical Nutrition Therapy
- Case Management
- Social Work
- Physician services provided in Psychiatry, Internal Medicine and Physical Medicine

#### LONG-TERM SKILLED CARE FOR YOUTH AND YOUNGER ADULTS

In 1996, On With Life's Long-Term Skilled Care for Youth and Younger Adults program opened in Glenwood, Iowa. This 32-bed facility is Iowa's only skilled care program specifically designed for youth and younger adults with brain injury or other neurological disorders. This unique program provides 24-hour skilled nursing care and a variety of therapeutic interventions using an on-site therapy gym, state-of-the-art sensory stimulation center, therapeutic pool and a sensory garden. Therapies provided include:

- Speech Therapy
- Physical Therapy
- Occupational Therapy
- Aquatic Therapy
- Social Work

- Therapeutic Recreation
- Neuropsychology
- Medical Nutrition Therapy
- Physician services provided in Psychiatry, Internal Medicine and Physical Medicine

#### OUTPATIENT NEURO REHABILITATION

On With Life's Outpatient Neuro Rehabilitation program has a comprehensive team of specialists dedicated to returning brain injury survivors to the activities, passions, roles and talents that define them as an individual. The Outpatient team of Brain Injury Certified Specialists includes physical therapists, occupational therapists, speech pathologists, a dietitian and a neuropsychologist. Our team provides therapy and programs for those that have sustained a neurological injury such as a traumatic brain injury, stroke or brain tumor; or those living with a neurological condition such as Parkinson's disease or multiple sclerosis. What makes us unique from many other outpatient therapy locations is that our sole focus is neuro rehabilitation.

#### SUPPORTED COMMUNITY LIVING

On With Life became the first provider of supported community living services when Iowa's Brain Injury Medicaid Waiver was created in 1997. This CARF-accredited program assists individuals in developing and maintaining functional life skills while living in their homes and actively participating in their communities. Services are provided by a staff experienced in brain injury rehabilitation and are focused on money management, budgeting, organizational skills, personal advocacy and community integration training. Staff members collaborate with persons served, family members and external case managers to maximize survivors' strengths. Services are provided to individuals in their homes in Polk, Warren, Jasper, Story, Dallas, Madison and Marion counties in Central Iowa.

#### NEUROPSYCOLOGICAL EVALUATION AND CONSULTATION

On With Life offers neuropsychological evaluation and consultation services on an outpatient basis for people living with a brain injury or other central nervous system dysfunction. Dr. David Demarest, our in-house neuropsychologist, uses scientific techniques to determine preexisting characteristics of the individual and provide an overview of the extent and type of changes brought about by the injury or condition. Dr. Demarest works with people of all ages with central nervous system dysfunction, including: traumatic or acquired brain injury, stroke, spinal cord injury, Alzheimer's and other dementias, progressive neuromuscular conditions such as Cerebral Palsy, and children or adolescents with neurodevelopmental disorders (LD, ADHD, autism).

#### THE APARTMENTS OF OWL CREEK

This program opened in January of 2005 with 14 ranch-style apartments. It is designed for persons who experience long-term disability following a brain injury, qualify for HUD subsidized rent and are able to live independently. Located on our Ankeny campus with plenty of green space and its own community center, this complex is designed to promote socialization, community integration and real life activities.

#### ON WITH LIFE 715 SW Ankeny Rd, Ankeny, IA 50023 www.onwithlife.org 1-800-728-0645



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# Student Objectives

- Gain knowledge on acquired brain injury (traumatic as well as onset, CVA's, anoxic brain injuries, etc.)
- Gain experience treating persons served in both programs: Rehab and Disorders of Consciousness
- Complete appropriate interventions based on clinical findings in efficient and effective manner
- Observe and/or complete evaluations (initial, discharge, and throughout length of stay).
- Develop appropriate care plans based on determined length of stay
- Complete daily, weekly, and monthly documentation in an efficient and concise manner
- Attend and/or report at monthly conferences and rounds
- Gain experience working with vendors (wheelchair, orthotic, etc.)
- Gain experience working with other clinicians (physical therapy, speech therapy, occupational therapy, recreation therapy, music therapy, psychology, social work, nursing).
- Have the opportunity to attend other learning venues (inservices, aquatic therapy, swallow study, etc.)

#### On With Life's Rehabilitative Treatment for Brain Injury

The families of both traumatic brain injury and acquired brain injury (stroke, tumors, infections, etc) victims often have many questions when their loved one is transferred to a rehabilitation center.

#### What happens in rehabilitation?

Similar to an acute care hospital, the persons served at On With Life will be cared for by a team of professionals who specialize in the treatment of persons with brain injury.

Initial goals are to:

- 1. Stabilize the medical and rehabilitation issues related to brain injury and the other injuries.
- 2. Prevent secondary complications. Complications could include pressure sores, pneumonia, and contractures.
- 3. Restore lost functional abilities. Functional changes could include limited ability to move, use the bathroom, talk, eat, and think.
- 4. Provide adaptive devices or strategies to enhance functional independence.
- 5. Analyze what changes might be required when the person goes home and/or if the individual will be able to safely transition home with the family and the person served.

The person served will participate in therapy each day. Initially, the person served may require staff assistance for even the simplest activities, such as brushing teeth, getting out of bed, and eating. The person served may require staff assistance for safety because there is a risk of falling, eloping (trying to get out of the facility to go home), or getting hurt. The person served may be confused and forgetful.

#### The Rehabilitation Team

At On With Life, we have two medical directors, an Internal Medicine physician who oversees medical care, and a Physiatrist who is the team leader for the therapy program. The General Medical Director is responsible for managing the complex medical needs of the person as well as addressing prevention. Physiatrists treat a wide range of problems including the changes after brain injury. The physiatrist will assess and prescribe the treatment and direct the team.

The neuropsychologist is a key member of our rehabilitation team. The neuropsychologist will assess the patient's changes in thinking and behavior which could include:

- > Poor memory
- > Poor attention and concentration
- Poor decision-making
- > Impulsivity

- > Disorientation
- > Language and communication abilities
- Inability to speak
- > Inability to understand when spoken to

Many persons served are unaware of the changes in the brain and how those changes affect their daily lives. A person served may not understand what has happened and may be distraught by being away from home. Through education and counseling, our neuropsychologist can help the person served and the person's served family cope with the changes impacting their lives.

Our Rehabilitation Nurses assist the person served with brain injury in attaining optimal health, the highest quality of life, and adapting to an altered lifestyle. The Rehabilitation Nurse provides care for the person served, the family/support system, and the nursing unit with focus on:

- Education
- > Health maintenance
- > Nutrition
- > Potential for aspiration
- > Impaired skin integrity
- > Bowel and bladder incontinence
- > Impaired physical mobility
- > Chronic and acute pain

- Impaired or limited ability to take care of self
- > Sleep pattern disturbance
- Impaired cognition
- Impaired verbal communication and comprehension
- Sexual dysfunction
- > Other medical needs

Specially trained Certified Nursing Assistants also provide direct care to our persons served under the supervision of the Rehabilitation Nurses.

Our Physical Therapists work with persons served to increase their functional mobility, whether that is in bed, in their wheelchair, or by walking, to help them achieve as much independence as possible. Physical therapists are experts in the examination and treatment of musculoskeletal and neuromuscular problems that affect the ability to move and function in daily life.

Physical Therapists will address skills related to:

- Positioning
- Posture
- Balance
- Strength
- Quality of movement
- Spontaneous movement

- Coordination of movement
- Increased sensation of sensory-motor activities
- > Pain management
- Functional mobility
- > Need for wheelchair, brace, or cane

Our Occupational Therapists work with persons served to assess functions and potential complications related to the movement of upper extremities, daily living skills, cognition, vision, and perception.

The Occupational Therapist will address skills related to:

- Splinting
- Positioning
- Visual skills
- Grooming/hygiene
- Bathing
- Dressing
- Cooking

- Grocery shopping
- Banking
- Budgeting
- Readiness for returning to work by assessing prevocational and vocational skills
- Need for assistive devices

Our Speech and Language Pathologists work with persons served to asses their communication, cognition (thinking skills), and swallowing function. The goal is to improve these functional skills to the level that allows for the highest level of independence that is possible.

The Speech and Language Pathologists will address skills related to:

- Communication
  - Auditory comprehension
  - Expressive language
  - Reading and writing
  - Pragmatics
  - Speech production

- > Cognition
  - Attention
  - Memory
  - Executive functioning
- Swallowing
- Our Music Therapist works with persons served to assist in increasing their overall functions and assists with:
  - > Physical Development
    - Movement
    - Strength
    - Coordination
  - Social Development
    - Expression
    - Vocabulary
  - > Melodic Voice Intonation

- > Cognitive Development
  - Memory
  - Sequencing
  - Reading
  - Organization
- > Emotional Development
  - Expression of emotion
  - Self Image
  - Relaxation

Our Recreational Therapists develop activities to target the individual's long-term goals and maximize his/her ability to restore lifestyle interests.

- > Physical Development
  - Movement
  - Strength
  - Coordination
- > Emotional Development
  - Expression of emotion
  - Self Image
  - Relaxation

- Social Development
  - Expression
  - Social interactions
- > Cognitive Development
  - Memory
  - Sequencing
  - Reading
  - Organization
- > Leisure Skills Development

Our Dietician assesses the nutritional needs of each person served to maintain:

- Safe swallowing
- > Maximize nutritional status
- Nutritional/medical needs

Our Social Workers assess the psychological, social, financial, and support needs of each person served and:

- > Provide counseling/support
- > Explore resource options
- > Develop a support network
- > Coordinates discharge planning/options

The Case Manager monitors and coordinates the rehabilitation plan of care, which includes addressing critical issues, overseeing the discharge plan, and communicating with the payer.

The Chaplain arranges for clergy visits, provides spiritual support, and provides regularly scheduled services. As part of On With Life's holistic approach to rehabilitation.

#### "Our Philosophy" Stop Treating the Brain Injured

Harvey E. Jacobs, Ph.D.<sup>1</sup>

There is no doubt that brain injury is a devastating and life-changing event for too many people each year. It is an equally significant event for families, friends and other's involved in the individual's circle of life. Rapid access to emergency care, astute diagnosis, and timely treatment can make the difference between hope or despair, and future or frustration.

Research has documented that well-integrated treatment teams can decrease life long impairments and disability, making it possible to reduce the consequences of brain injury. Unfortunately, these services end too quickly for far too many people who are only beginning to achieve their promise when funding, programming and other critical elements to successful recovery cease.

It is equally devastating when services are improperly delivered, or when the person gets lost in their brain injury. As noted by the noted neuropsychologist Muriel Lezak nearly 30 years ago, severe brain injury begins as a medical challenge, but ultimately becomes a social catastrophe.

Today, more people than ever survive the initial consequences of brain injury due to tremendous technological advances in emergency care and treatment. At this point a person's life or death depends on the precision and integrity of advanced medical technology and coordinated systems of clinical care. Intervention focuses on the specific challenges to a person's survival. Just as important is the social contract within our society to take care of one another in such circumstances of extreme need without exploitation. For at this point a person is truly a victim with little or no involvement in the process.

Victims become patients as early medical intervention services transition to rehabilitation services. We long ago realized that approaches so important during the early stages to prevent people from dying are not adequate or appropriate for this equally important part of the recovery process; hence, the need for this different approach.

In rehabilitation we continue treating the damaged parts of people and this diagnostic approach can be useful when we are first trying to help a person regain such basic abilities as walking, talking, and self-feeding.

But rehabilitation has its own limitations and other approaches are needed to help individuals regain their perspective and identity. Location is a significant issue. Most rehabilitation services take place in designated medical or treatment facilities. Although helpful at the beginning when intensive treatment is needed, these locations can later become a hindrance as the challenges change from basic restoration to the use of compensatory strategies in one's home and

community. Fortunately, some rehabilitation programs now reach out to community settings, but their grasp can be limited.

Too often treatment approaches continue to view the individual for their deficits instead of their abilities. This identity, unfortunately, becomes attached to the person and those who are with them. It is an insidious process, but over time one cannot help but feel devalued and viewed for what they cannot do instead of for their hopes, dreams and abilities. This in turn leads to increased dependency, depression and despair, which promotes isolation, behavioral disruption and further failure.

This may all sound like semantics, but it isn't. Working with the whole individual and not just treating a person's damaged components has a real effect on outcomes. People who have the ability to place their history of brain injury within the perspective of their overall lives have greater chances for personal development and success. They learn quickly that although a brain injury is part of their lives, it does not have to define their life. They can still be husbands, wives, brothers, sisters, workers, students, like sports, enjoy music, and be involved in all other areas that have always been important to them.

While many people still may need help and services, the difference is that these supports become incorporated into the cadence of their daily lives, rather than a separate component. In addition, the work and effort produce real payoffs that each person can see as they gain greater control and direction in their lives. It's no longer about incremental gains in therapy, but real life opportunities that develop and contribute to personal success and quality of life. Both cognitive and behavioral treatment approaches are most effective when they are used to help people address personally identified challenges in real world situations as compared to isolated treatment settings.

When we stop treating the brain injured we enter into partnerships with people to help them expand their horizons and celebrate their success. We replace the concepts of the "brain injured patient" and "life after brain injury" with the understanding that a brain injury is only one part of a person's life, but should never define the total person or how we relate to one another. Tying the past with the future is critical for a successful perspective of the full person.

For example, years ago I received a referral about a "52 year old female with a diagnosis of status post surgical resection for a brain tumor with major frontal lobe involvement who was easily agitated and socially inflexible." After a few dry clinical sessions, we met for lunch with several other "patients" one day, ostensibly to evaluate her social skill deficits so that she could learn to be "appropriate." A picture of an airplane hung on the restaurant and she began to talk about her earlier work as a Pan Am flight attendant. For the first time her eyes sparkled and her voice radiated as she talked about her international travels. People paid little attention until she mentioned a London to New York flight in early February 1964 that contained four unknown musicians on their way for an appearance on the Ed Sullivan show. Nobody at the table ever disregarded her again because of her brain injury. On that specific flight, she had brought the Beatles to America.

My friend rarely had problems relating to others again. It was not because of the Beatles, but because she and others acknowledged her life of which brain injury was only one part. From this initial base other wonderful facets also appeared. She could still be as cantankerous and unyielding as anybody, but this was only part of her and there was so much more that she had to give and receive from others. And she no longer introduced herself as "My name is Sally and I'm brain injured." From then on, simply "Sally" was sufficient.

1. Originally published in Learning Services: Relearning Times. Harvey Jacobs is trained as a psychologist and serves people seeking opportunity who have been challenged by disability. He can be contacted at: 9221 Forest Hill Avenue; Richmond, VA 23235; (804) 814-0609; <u>hejacobs@comcast.net</u>

#### POLICY OHO3:I

#### On With Life, Inc. PERSONAL APPEARANCE

Safety and infection control, customer satisfaction, and professional image are essential to On With Life's success, as they are to all health care providers.

Guidelines have been developed to ensure that each employee's appearance reflects the excellent, high quality work we perform. The policy applies to employees, volunteers, students and interns. While it is impossible to delineate every item concerning personal appearance which may or may not be appropriate, employees should remember that <u>radical departure from conventional dress or personal grooming is not permitted</u>.

All health department rules and regulations pertaining to specific departments supersede this policy.

If an employee reports to work improperly dressed, the supervisor will advise the employee to correct the appearance, and the employee may be sent home to change (hourly employees must clock out). Repeated disregard for the dress code policy may result in disciplinary action.

- 1. NAME TAGS: All employees are required to wear name tags at all times per state regulations. If an employee reports to work without their approved name tag, the employee is responsible for securing a temporary name tag.
- 2. NEAT, CLEAN AND WRINKLE-FREE CLOTHING: All clothing worn to work at On With Life should be clean, pressed (wrinkle-free), and stain-free. Soiled or torn clothing is unacceptable.
- 3. OWL LOGO WEAR: OWL logo t-shirts and non-hooded sweatshirts are acceptable if clothing is neat, clean, and wrinkle-free. Administrative staff members may wear logo polo shirts, but may wear logo t-shirts and non-hooded sweatshirts only as designated by the Administrator and/or Executive Director.
- 4. CASUAL CLOTHING: Extremely casual clothing is never appropriate. This includes, but is not limited to: exercise wear, non-OWL logo t-shirts, sweatshirts or sweatpants, leggings, clothing made of nylon or Lycra, etc. If you would wear it to the gym to work out, it isn't appropriate for the workplace.
- 5. WRITTEN OR PICTORIAL MESSAGES ON CLOTHING: OWL Extended Care program employees may wear t-shirts and non-hooded sweatshirts that are not OWL logo wear. However, written or pictorial messages on clothing may never be suggestive, defamatory or profane. OWL Rehab program employees may wear non-logo clothing only on days designated by the Administrator of that program.

#### 6. BLUE JEANS:

Ankeny Rehab: staff members may wear blue jeans only on designated days. An exception is made for Environmental Services staff members due to the nature of their work. Other exceptions may be made for outings, as deemed appropriate by the Administrator.

Glenwood Extended staff members and Community Services staff members are directed to follow guidelines set by the Administrator of the program, with clothing always being neat, clean, wrinkle-free, with no holes, and pants not dragging on the floor.

- 7. HEADWEAR: Headwear of any kind cannot be worn unless approved by the Administrator of the program. On With Life logo ball caps may be approved for wear by Environmental Services when a staff member is working outdoors, or when the cap serves as necessary protection for the head. Headbands and barrettes are acceptable headwear.
- 8. HAIR: Hair must be clean and neat at all times. Employees who work with mechanical or kitchen equipment must contain or restrain long hair for safety purposes. Sideburns, mustaches and beards must be worn neatly trimmed.
- 9. DRESSES: Dresses, skirts or similar items cannot be shorter than three inches (3") above the middle of the knee.
- 10. SHIRTS AND TOPS: Shirts and tops must have sleeves, and should cover the body to the waistline. Employees must be aware of shirts and tops that might creep up when the employee bends over, and should not wear such apparel. Low, plunging necklines, extremely tight clothing, strapless dresses or tops, see-through clothing, halter tops, tank tops, backless tops and mid-riff tops are not appropriate for work.
  - SHORTS: Ankeny staff members may not wear shorts except for employees who work outside doing

grounds maintenance. These employees may wear shorts no shorter than three inches (3") above the middle of the knee.

Glenwood and Community Services staff members may wear shorts as directed by the administrator, but in no case should they be shorter than 3" above the middle of the knee.

- 11. PANTS: Baggy pants that ride below the waistline and expose undergarments are not considered professional work wear. All staff members must be aware of how far their pants come down on their body when bending over. Skin should not be exposed when bending over. Pants are too long if they drag on the floor. Bib-overalls are not appropriate wear.
- 12. UNDERGARMENTS: Employees are expected to wear clothing with appropriate undergarments.

- 13. FOOTWEAR: Because safety is always an issue, employees should be alert to shoes which may cause them to slip, trip or fall. Beach sandals (flip-flops and thongs) should not be worn. Certain departments will have stricter guidelines. Open-toed shoes and shoes with stacked heels are not permitted in Environmental Services, Dietary, Nursing or Therapy departments, as the potential for injury and/or exposure to bodily fluids is greater.
- 14. JEWELRY: On With Life cannot be held responsible for jewelry or expensive items worn by employees that are damaged in the course of employment. Dangling jewelry or jewelry that might present a hazard to either the employee or the persons served must not be worn.
- 15. PIERCINGS: Piercings will be limited to earrings. Industrial ear art is not appropriate at work. An employee with facial piercings must cover the piercing(s) or use clear spacers while at work. All other body piercings should be covered while at work.
- 16. EXPOSED BODY ART: Tattoos that are exposed (arms, legs, hands, neck, face, feet) must be covered if the tattoo would be considered offensive by the average person. This includes tattoos that are obscene, gang related, or that contain negative expressions of any kind. On With Life must always be conscious of the way we present ourselves to our persons served and their families.
- 17. PERFUME/COLOGNE: All fragrances must be subtle, as many people are sensitive to scents and other odors.
- 18. DAMAGED CLOTHING: Clothing destroyed in the course of employment should be reported to the Administrator. A reimbursement for replacing the item(s) of clothing may be requested up to a maximum of \$50 per item.

Beyond minimal standards of dress found in this policy, each department may address further guidelines. Dress code accommodations related to religious beliefs, the ADA (American Disabilities Act), or other non-discriminatory statutes, should be referred to the Director of Human Resources.

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 7/15/08

Vilia Tarvydas, President of the Corporation

Date

Julie Fidler Dixon, Executive Director

Date

# **BRAIN INJURY 101**

#### WHY DO WE NEED TO TALK ABOUT BRAIN INJURY?

Traumatic Brain Injury is the leading cause of disability and death among children and young adults in the United States.

Data from the Iowa Department of Public Health indicates that over 5000 Iowans per year are hospitalized with brain injury.

Since the 1970s, medical treatment and transport has created an ever increasing group of "survivors."

Every 15 seconds there is an incidence of brain injury.

#### WHAT IS BRAIN INJURY?

Iowa Administrative Code 441-83.81 (249A) makes the following definition:

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

#### WHAT ARE THE COMMON MYTHS ABOUT BRAIN INJURY?

Most people with a very severe brain injury will likely die early.

Brain damage is permanent and irreversible. Life after brain injury is not worth living.

People with brain injury are volatile, aggressive, and unpredictable.

People with brain injury experience dramatic losses in intellectual functioning.

Most brain injuries occur among people who were drinking and driving.

The point of impact and force of a brain injury tells us a great deal about its consequences.

Whatever recovery occurs will happen in the first 12 months.

Recovery begins after coma, continues at an upward pace, and slows down and levels off.

A "miracle" of recovery will occur only if the family finds the right doctor or program.

Average IQ on psychological assessment indicates that the person is cognitively recovered.

Persons with brain injury who demonstrate dissatisfaction with their lives, have unclear goals, have failing relationships, or exhibit disordered lifestyles will find relief in and need psychotherapy.



The brain regulates and controls almost every bodily function.

Fifteen percent (15%) of the total blood flow in the body is to the brain.

> The brain uses twenty percent (20%) of the body's oxygen.

There are approximately 100 solution neurons in the brain. The interconnections are infinite.

> Two percent (2%) of the body's weight is the brain.

#### WHAT PROTECTS THE BRAIN?

The skull bones make up the **cranium**.

Meninges are the membranes of the brain.

Dura Mater is the outer membrane which is thick and strong.

Arachnoid is the middle membrane and appears as a cobweb.

Pia Mater is the inner membrane next to the brain.

Spaces between the meninges:

Epidural Space is between the dura mater and the skull.

Subdural Space is between the dura mater and arachnoid. It contains venous drainage.

**Subarachnoid Space** is the between the arachnoid and the pia mater. It contains the blood flow in to the brain.

Cerebral Spinal Fluid protects and cushions the brain.

#### WHAT ARE THE STRUCTURES OF THE BRAIN?

#### Cerebellum

- Handles coordination and integration of voluntary movements
- Maintains balance and equilibrium of the body
- Injuries to this area can cause problems with coordination, sequencing, shakiness, balance, and can cause someone to walk as though they were drunk

#### **Brain Stem**

**Pons**—Transmits impulses between spinal cord and higher cerebral cluster. **Medulla Oblongata**—handles heart, respiratory, and other reflex actions such as cough and swallowing.

#### Cerebrum

- Divided into the right and left hemispheres
- Contralateral Control—the left side of the brain controls the right side of the body and vice versa.

#### **TWO MAJOR TYPES OF BRAIN INJURY**

#### **Traumatic Brain Injury**

Traumatic Brain Injury (TBI) is the result of a sudden, physical assault to the brain or anoxia.

#### **Acquired Brain Injury**

Acquired brain injury is the result of insidious infection, vascular lesions, or tumors of the brain not primarily related to degenerative or aging processes.

#### TRAUMATIC BRAIN INJURY

Traumatic Brain Injury differs from other types of brain injury in the following:

- It happens *suddenly* brings a significant change *immediately*.
- Damage is usual *diffuse and widespread*, not confined to one area of the brain. Thus, there are multiple effects.

#### TYPES OF TRAUMATIC BRAIN INJURY

#### **Open Head Injury**

The brain is penetrated from outside, i.e., a bullet wound.

#### **Closed Head Injury**

The brain is damaged within the head, without external penetration.

## TYPES OF CLOSED HEAD INJURIES

#### Diffuse

Widespread damage results from the stretching and tearing of nerve fibers. When the brain mass twists and shifts, billions of thread-like nerve connections are pulled and stretched. Some actually snap and never function again. Some that are stretched may recover, but others degenerate and finally fall apart.

#### Concussive

This is a brief loss of consciousness following a blow to the head. The brain mass collides with the sharp ridges inside the skull. As it bounces off hard bone, it is torn and bruised. Contusions (bruises) are most likely to occur at the tops and base of the frontal and temporal lobes.

#### **Coup/Contrecoup**

If the head is struck in a particular way, the skull may bend in, bruising the brain, then driving the brain mass against the opposite wall of the skull so that brain tissue on the other side is bruised as well.

#### Hematomas

Heavy bleeding (hemorrhage) or slow leakage of blood from the blood vessel inside the brain. This causes an accumulation of blood called a hematoma.

#### **Increased Intracranial Pressure**

A build up of pressure within the skull which can compromise delicate brain tissues and lead to further brain injury.

#### Seizures

5-10% of all persons with a brain injury will have seizures soon after a brain injury or even years later.

#### Coma

A prolonged state of unconsciousness in which the patient is unresponsive and unaware of surroundings or has minimal response.

#### **IDENTIFYING A POSSIBLE BRAIN INJURY—SOME CLUES**

#### Verbal Issues

Poor speech Monotone Vulgarity/swearing

Personality Issues

Denies deficits Irritable Egotistical Doesn't' listen Asks a lot of questions Argumentative

Social Issues

Doesn't recognize "personal space" Inappropriate social interaction (overly formal or overly friendly) Interrupts conversations Poor eye contact

#### **Behavioral Issues**

Wanders off/runs away Impulsive (acts without thinking) Repeated invasion of personal space Short fuse Unable to control angry outbursts

#### Thinking Issues

Easily distracted Seems to "space out" Difficulty understanding Difficulty with reality Seems confused Poor memory Decreased safety awareness Slow to answer questions Difficulty organizing time

Inappropriate conversation (sex, drugs, alcohol abuse) Fabricates stories/lies Goes off on tangents

Manipulative Appears unmotivated Moody-laughs or cries easily Depressed Face shows little/no emotion Appears angry

Talks too loud or too soft Difficulty finding words Broken speech

#### Denial

A reluctance (either conscious or unconscious) to recognize deficits based upon psychological factors.

#### Unawareness

An inability to recognize deficits caused by neurological injury

#### **TYPES OF AWARENESS DEFICITS**

#### **Intellectual Awareness**

The cognitive capacity a person to understand that a particular skill is diminished from premorbid levels.

Some degreed needed for higher levels of awareness.

#### **Emergent Awareness**

The ability of a person to recognize a problem when it is actually occurring.

#### **Anticipatory Awareness**

The ability to anticipate that a problem is going to happen because of some deficit.

#### **Intellectual Awareness**

Facilitated through repetitive education of both the person served and family

Emphasis on explaining deficit areas and explaining what function implications could be

Provide feedback when deficit area is affecting performance

Video taping is a common and effective method

Feedback needs to be immediate, concrete, and objective

Trusting relationship is important context for effective feedback

#### **Emergent Awareness**

Facilitate by providing feedback to recognize when problems are occurring

Use consistent terminology and be specific and concise

Give specific, observable signs of how the problem is affecting the person served

Cues may begin generally and, if needed, increase in specificity

Videotaping is helpful, especially of group activities

#### **Anticipatory Awareness**

Guide consumers into planning for deficits prior to starting task

Feedback is needed; experience of natural consequences of one's actions may be helpful

Experience in variety of situations must be experienced to learn from mistakes

#### **BRAIN INJURY INTERVENTION STUDIES**

Persons served often have other types of problems before the injury such as drug or alcohol abuse.

Rapid entry in to a rehabilitation facility increases the likelihood of an optimum recovery.

The most rapid recovery occurs in the first six months. This is largely due to the brain's ability to heal. However, significant recovery continues beyond one year. Long-term treatment and follow-up is important to develop compensatory skills and maximizing independence.

Physical problems decrease over time during rehabilitation, but psychological complications can increase.

Factors that predict outcomes for brain injured persons do not necessarily predict accurately for individuals.

Many persons who were living with non-family members returned to living with their families during the first year after injury.

Family reactions are critical to successful rehabilitation. Family education and intervention help significantly.

#### **Frequency of Problems**

Most Frequent Problems:	Least Frequent Problems:	Other problems:
Sexual issues	Child care	Communication
Role-change issues	Intrafamilial relationships	Leisure time
C C	Household task sharing	Withdrawal/socialization
	-	Dependency

Each problem was mentioned as a significant one by at least 20% of consumers. The number of problems mentioned was related to family attitudes toward the situation.

Psychological distress of consumers and families was found to be more limiting that the physical impairment, yet psychological service are often not available.

Major long-term rehabilitation needs:

Follow-up services Availability of social activities Effective models for coordination by service providers

Services needed by persons served are often unavailable in the community.

Education of both professionals and family members is critical.

#### **INTERACTIONAL CONSIDERATIONS**

Model consistent, calm, and controlled behavior

Attempt to modulate stress in the environment

Allow the person time for mourning or readjusting his/her self-concept.

Use cues relevant to the person's best cognitive or sensory modalities—i.e., beware of language use when working with persons with verbal deficits

Continually accentuate gains for positive reinforcement; ALWAYS seek out and emphasize assets, not just limitations

When involved in confrontational situations reframe and offer immediate options

If possible, attempt to teach skills ancillary to successful employment (e.g. conversational skills, punctuality) in more than one setting (i.e. counselor's office and then give the person a similar "homework" assignment to do in the community)

Expect the unexpected

Remember: Support + Skills = *SUCCESS* 

Think ecologically~ Person in the Environment

#### FACILITATING COMMUNICATION

Ask specific questions in concrete terms that describe areas of strength as well as deficits in functional terms.

Provide feedback on performance in small amounts at regular intervals. Invite family members to staffings whenever possible.

For the uninvolved families, mail brief written reports if they fail to respond to your phone calls.

Allow time for information to be processed and assimilated. Repeat explanations if necessary.

Elicit the consumer and family's input and agreement as to what evaluations measure.

Be specific when giving feedback regarding performance or behavior; describe appropriate behavior or expected performance.

#### **DEVELOPING REALISTIC GOALS**

Allow a "fair hearing" of unrealistic goals.

Take a "wait and see" attitude; do not dismiss what appears to be an unrealistic goal out of hand.

Focus person served and family initially on the intermediate goal of putting together a picture of strengths and weaknesses.

If necessary, allow yourself several interviews to develop a complete picture of the person served and their support system.

Try to involve the family in observation/data collection.

Use work trials; help your vendor to be specific in data collection.

Describe work goals as intermediate until performance for the desired goal can be achieved.

Expect backsliding. Refocus person served and family back to the intermediate goal, emphasizing progress made towards this goal.

At different times, you may spend more time talking to the family than the person served.

Start early to identify long-term supports needed for job retention. Elicit person served and family input.

#### COGNITIVE SKILLS AND FUNCTIONS ASSOCIATED WITH THE 4 LOBES OF THE BRAIN

#### PARIETAL LOBE

Tactile Perception (touch) Awareness of Spatial Relationships Academic Skills (reading



Controlling Attention Motivation Emotional Control Guide/Control Social Behavior Judgement Problem Solving Decision Making Expressive Language Motor Integration Voluntary Movement



## TEMPORAL

Memory Receptive Language Comprehension of Language Musical Awareness Sequencing Skills

#### OCCIPITAL

Visual Perception Visual Input Reading (perception and recognition of printed words)

#### FRONTAL LOBE

The **Frontal Lobe** is the executor of the brain. It links and integrates all components of behavior at the highest level.

#### Functions:

- How we know what we are doing within our environment (Consciousness), initiate activity in response to our environment
- Judgments we make about what occurs in our daily activities



- Controls our emotional response and expressive language
- Assigns meaning to the words we choose. Involves word associations
- Memory for habits and motor activities

- Loss of simple movement of various body parts (Paralysis).
- Inability to plan a sequence of complex movements needed to complete multi-stepped tasks, such as making coffee (Sequencing)
- Loss of spontaneity in interacting with others
- Loss of flexibility in thinking
- Persistence of a single thought (Perseveration)
- Inability to focus on task (Attending)
- Mood changes (Emotionally Labile)
- Changes in social behavior
- Changes in personality
- Difficulty with problem solving
- Inability to express language (Broca's Aphasia)

The **Parietal Lobe** is largely responsible for construction ability and language. It interprets sensory signals received from other areas of the brain such as vision, hearing, motor, and memory.

#### Functions:

- Location for visual attention, touch perception, goal directed voluntary movements, and manipulation of objects.
- Integration of different senses that allows for understanding a single concept.



- Inability to attend to more than one object at a time, name an object (Anomia), locate the words for writing (Agraphia).
- Problems with reading (Alexia)
- Difficulty with drawing objects
- Difficulty in distinguishing left from right
- Difficulty with doing mathematics (Dyscalculia)
- Lack of awareness of certain body parts and/or surrounding space (Apraxia) that leads to difficulties in self-care.
- Inability to focus visual attention.
- Difficulties with eye and hand coordination.

The **Temporal Lobe** is associated with verbal processing, memory retrieval, and auditory processing.

#### Functions:

- Hearing ability
- Memory acquisition
- Some visual perceptions
- Categorization of objects



- Difficulty in recognizing faces (Prosopagnosia)
- Difficulty in understanding spoken words (Wernicke's Aphasia)
- Disturbance with selective attention to what we see and hear
- Difficulty with identification of, and verbalization about objects
- Short-term memory loss
- Interference with long-term memory
- Increased or decreased interest in sexual behavior
- Inability to categorize objects (Categorization)
- Right lobe damage can cause persistent talking
- Increased aggressive behavior



The **Occipital Lobe** is the primary visual reception area and enables us to interpret visual images.



#### Functions:

• Vision

- Defects in vision (Visual Field Cuts)
- Difficulty with locating objects in environment
- Difficulty with identifying colors (Color Agnosia)
- Production of hallucinations
- Visual illusions inaccurately seeing objects
- Word blindness inability to recognize words
- Difficulty in recognizing drawn objects
- Inability to recognize the movement of an object (Movement Agnosia)
- Difficulties with reading and writing.

The **Cerebellum** is the second largest part of the brain. It is located at the back of the brain beneath the occipital lobes.

Functions:

- Coordination of voluntary movement
- Balance and equilibrium
- Some memory for reflex motor acts.

- Loss of ability to coordinate fine movements
- Loss of ability to walk.
- Inability to reach out and grab objects
- Tremors. Dizziness (Vertigo)
- Slurred Speech (Scanning Speech)
- Inability to make rapid movements.



The **Brainstem** is the lower extension of the brain where it connects to the spinal cord. Neurological functions located in the brainstem include those necessary for survival (breathing, digestion, heart rate, blood pressure) and for arousal (being awake and alert). It contains three parts, the midbrain, pons, and the medulla oblongata.



#### Functions:

- Breathing
- Heart Rate
- Swallowing
- Reflexes to seeing and hearing (Startle Response).
- Controls sweating, blood pressure, digestion, temperature (Autonomic Nervous System)
- Affects level of alertness
- Ability to sleep
- Sense of balance (Vestibular Function)

- Decreased vital capacity in breathing, important for speech
- Swallowing food and water (Dysphagia)
- Difficulty with organization/perception of the environment
- Problems with balance and movement
- Dizziness and nausea (Vertigo).
- Sleeping difficulties (Insomnia, sleep apnea)



The **Cerebrum** is composed of the left hemisphere and the right hemisphere. Each hemisphere has four lobes consisting of the frontal, temporal, occipital, and parietal. The left hemisphere interprets logically and the right hemisphere processes holistically.

# FUNCTIONS AREA OF THE BRAIN





**Concussion** is a brief loss of consciousness following a blow to the head. The brain mass collides with the sharp ridges inside the skull, bounces off the hard bone, and is torn and bruised. Concussions are most likely to occur at the tops and base of the frontal and temporal lobes.



**Coup** – **Contrecoup** occurs when the head is struck; the skull may then bend in, bruising the brain. The force of the blow then drives the brain mass against the opposite wall from where the initial blow occurred, bruising that area also.

#### EPIDURAL, SUBDURAL, AND INTRACEREBRAL HEMATOMAS



An **Epidural Hematoma** a blood clot that forms between the skull and the top lining of the brain (dura). This blood clot can cause fast changes in the pressure inside the brain. Emergency surgery may be needed. The size of the clot will determine if surgery is needed.



A **Subdural Hematoma** is a blood clot that forms between the dura and the brain tissue. If this bleeding occurs quickly it is called an acute subdural hematoma. If it occurs slowly over several weeks, it is called a chronic subdural hematoma. The clot may cause increased pressure and may need to be removed surgically.



An **Intracerebral Hemorrhage** is blood clot deep in the middle of the brain that is hard to remove. Pressure from this clot may cause damage to the brain. Surgery may be needed to relieve the pressure.

http://www.uihealthcare.com/topics/medicaldepartments/neurosurgery/braininjury/index.html

## **CORONAL VIEW OF THE HEAD**



# THE BRAIN AND SPINAL CORD



The **Brain** is located at the upper end of the **Spinal Cord.** The brain is a soft, wrinkled mass of nerve tissue floating in the skull. It is encased in layers of protection and cerebral spinal fluid.

## NEURAL STRUCTURE



