To learn that someone you care about has sustained a brain injury is never easy. Many people experience worrisome and confusing thoughts while the uncertainty about the patient’s recovery adds to the level of stress and despair.

UofL Health - Frazier Rehab Institute offers a comprehensive brain injury treatment program, staffed with highly skilled professionals and organized to treat each patient according to their individual needs.

This handbook for the family and friends of persons with brain injury is designed to provide basic information about brain injury, to outline the Brain Injury Program at Frazier Rehab Institute, and to explain how you can assist in the recovery of your family member and/or friend.

**UofL Health – Frazier Rehab Institute - Brain Injury Program**

A person with brain injury is admitted to the Frazier Rehab Brain Injury Program by a physiatrist, a physician who specializes in rehab medicine. Once admitted, a specified treatment team of professionals is assembled according to the rehabilitation needs of each patient. Members of the treatment team may include:

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<thead>
<tr>
<th>Name</th>
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<tr>
<td>Patient's Name</td>
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<tr>
<td>Family Member</td>
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<td>Family Spokesperson</td>
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<tr>
<td>Physiatrist or Rehab Physician</td>
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<td>Psychologist</td>
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<td>Psychological Associate</td>
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<td>Occupational Therapist</td>
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<td>Dietitian</td>
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<td>Speech-Language Pathologist</td>
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<td>School Tutor/Coordinator</td>
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</table>
Family Spokesperson
The treatment team includes a patient’s family or significant others because you have valuable information helpful during treatment planning and you can support the patient in very special ways during the recovery process.

The treatment team will ask that one person in the family be identified as the “family spokesperson.” This is the person to whom the treatment staff will communicate all relevant information about treatment goals, patient progress and plans for discharge. Weekly communication between the family’s spokesperson and case manager is essential. We ask that the spokesperson then communicate relevant information to other family members.

Getting Started at Frazier Rehab
Once the patient has been admitted to his/her room at Frazier Rehab, a rehab nurse will begin the evaluation process to determine the patient’s level of functioning. Others on the treatment team will begin their evaluation that same day or the day following depending upon the time of admission. Part of the evaluation process will include interviews with you. This helps the treatment team learn about the patient’s background, likes and dislikes, and significant events in the past. The team will also want to know what changes the family and patient have noticed since the onset of the injury or illness. The team will ask about the layout of the space in the home to plan for a safe return to home. Providing this information is one important way the patient and family can participate in the rehab process. If you think of relevant information after these interviews, make a note and share that information with the appropriate team member at a later time.

During the initial evaluation, the treatment team will begin to identify the patient’s “Functional Problems.” These functional problems are caused by the brain injury and could include inability to maintain attention, memory impairment, and impaired self-care or mobility skills. It is these functional problems that clarify the reason that rehabilitation is needed for the patient. Once functional problems are identified, the team will establish a treatment goal for each problem. The functional problems and the treatment goals are the basic components in a treatment plan. We encourage the patient and family to help create these goals.

Once each week, the treatment team will meet to update and revise the functional problems list and long-term treatment goals. In addition, the team will identify the weekly treatment priorities upon which the team will focus during the next seven days. When appropriate, the family will be asked to help the patient and other team members reach these weekly goals.

The treatment team will carefully evaluate the patient’s level of functioning according to the Rancho Los Amigos Cognitive Recovery Scale, which defines ten levels of recovery from brain injury. Shortly after admission, you may hear the staff say that the patient is functioning at a Rancho Level between 1 and 10. During a patient’s admission, the Rancho Level may change significantly and often. Some survivors move slowly through the Rancho Levels and speed of recovery does not suggest poor ultimate outcome. A summary of the Rancho Scale can be found later in this booklet. As you read further, you will find additional information that will help you during the patient’s recovery. We encourage you to write down your questions as you proceed so you can ask them when meeting with members of the brain injury team. You may find it helpful to read this material more than once.
Therapy sessions are scheduled at specific times for each patient. There are occasional therapeutic reasons to change a patient’s schedule and as a result of timely team communication these beneficial schedule changes will occur. Please be aware that the patient’s therapy schedule may change for non-clinical reasons, such as changes in a therapist’s schedule or admission/discharge patterns. A daily master schedule is available by 8:30 a.m. at the nurses’ station. You will get an updated daily schedule by 9 a.m. Therapists may come to work with the patient at unscheduled times to provide maximum benefit from rehab. Please let the team know how the patient is tolerating their therapy times.

Team Approach

Case Management: Case managers coordinate discharge planning with the patient, family and treatment team. They schedule family teaching days and team/family meetings to educate family members about brain injury and to prepare them for discharge. The case manager communicates with your insurance company and can direct families where to get insurance questions answered. The case manager provides information about and makes referrals to community resources. The case manager serves as the family’s liaison to the treatment team to ensure that your questions and concerns are addressed as they arise.

Psychology: Psychology services are provided by psychologists and psychological associates who specialize in diagnosing and treating the behavioral, social and emotional problems that result from neurological illness and injury. They provide consultation to the treatment team, educational and support services to families and patients. Comprehensive neuropsychological evaluations are available through Frazier Rehab that assess a variety of thinking, memory, sensory, intellectual, academic and vocational skills, as well as emotional functioning.

Occupational Therapy: Occupational therapists and occupational therapy assistants help patients improve the skills needed to perform self-care, participate in leisure activities and return to work. Occupational therapists will focus on increasing strength, balance, sensation and coordination. They will also address cognition (thinking) and problem solving abilities. Patients may be encouraged to use adaptive equipment or adaptive techniques in order to become more independent in daily activities.

Physiatry: A physician who specializes in rehabilitation medicine is called a physiatrist. Your physiatrist coordinates the medical and rehab care, outside consultants and referrals for continued services. Upon completion of the brain injury program, some medical rehab services will continue to be provided by your physiatrist. You will need to see your primary care physician within a couple of weeks of discharge from the inpatient stay at Frazier Rehab. If you don’t have a primary care physician, your physiatrist will help refer you to one.

Physical Therapy: Physical therapists and physical therapy assistants work with patients to improve mobility, strength, coordination, balance, endurance, flexibility and safety within their environment. The goal is to achieve the highest level of function for each individual both in and outside the home environment. If patients are unable to achieve independence with walking skills, physical therapists recommend and encourage the use of braces, assistive devices or custom wheel chairs to maximize each patient’s level of independence.
**Therapeutic Recreation:** Therapeutic recreational specialists help patients improve their abilities to participate in leisure activities and teach patients how to adapt to recreational skills and attitudes after disability. The recreational therapists plan many activities, indoor and outdoor, so patients can practice being as independent as possible in their own recreational or leisure activities.

**Registered Dietitian:** Dietitians are part of the multidisciplinary team ensuring adequate nutrition for all patients. An individualized nutrition plan of care is developed and education provided as needed.

**Rehabilitation Nurse:** The rehabilitation nurse closely monitors, coordinates and delivers nursing interventions designed to restore and maintain maximal health and independent functioning. These interventions vary depending on the individual’s physical and mental status, vital signs, level of alertness, nutritional status, bowel and bladder status, sleep/wake cycles, skin integrity, pain levels, medication, and treatment regimen. The rehab nurse is an active member of the interdisciplinary team. The RN and nursing assistant reinforce skills learned in therapy.

**Speech-Language Pathology:** Speech-language pathologists address communication skills, which involve listening, speaking, reading, writing, and cognitive (thinking) skills. Speech-language pathologists also diagnose and treat swallowing problems.

**Brain Injury Services after Inpatient Hospitalization**
In most instances, patients are ready to be discharged from the inpatient program before many of the problems associated with the brain injury have resolved. Frazier Rehab Institute offers several therapy alternatives after discharge to meet the needs of the patients with a brain injury. The treatment team will recommend the option that is best suited to the patient’s needs.

**NeuroRehab Program**
This program prepares the patient for a successful return to community life. Located in one of our outpatient facilities, this service has a complete interdisciplinary team that specializes in neurologic rehab. Through individualized case management, the specific and unique needs of each patient are addressed. The team may coach patients at jobsites, school or in their home. The program also offers family education. The emphasis for this part of our continuum is achieving practical, real life goals.

The person with brain injury is ready for the NeuroRehab Program when they demonstrate a readiness for return to unsupervised independence within the home, school, work setting or other productive roles within the community.

**Falls, Prevention**
Brain injury patients are at high risk for falls. This is due to possible confusion and physical weakness. Falls can lead to serious physical injuries such as cuts, bruises, broken bones, another brain injury, and even death. To prevent falls, an alarm may be placed on the bed or wheelchair that will sound when the patient tries to get out of bed or the wheelchair. Another safety option to prevent falls, is an enclosed bed. Family members should not get patients up. Always call for assistance by using the call light. A patient should not be left sitting at the side of the bed as many falls occur while sitting on the side of the bed. The patient will be assessed for falls risk throughout the stay.
Visitation at Frazier Rehab
The treatment team has found that the most productive social visits occur during the evening hours after therapies have been completed. Therefore, we request that extended family members and friends schedule their visits after 4:30 p.m. Monday through Friday. Primary caregivers are encouraged to be present for family teaching throughout the day as often as possible. Weekend therapy may not be as tightly scheduled as on week days so visiting during the day on Saturday and Sunday may be more possible.

Social visits should be limited to brief periods of time with no more than one or two family members or friends present in the patient’s room at a time. Questions concerning the patient’s readiness for visitors, particularly those who might overstimulate the patient are best discussed with the patient’s doctor or therapists. The staff also requests that you respect the rights of other patients to a private, quiet and peaceful hospital environment.

The length and frequency of visits that are most helpful to any given patient varies. Sometimes patients become overstimulated, overly emotional or even lose motivation when family and friends are present. This is not uncommon and should be viewed as a normal part of the recovery process. Accordingly, the treatment team may ask you to limit your visits during this stage of recovery.
Similarly, the team may encourage you to increase your visits when this benefits the patient.

The Family as Team Members
The Brain Injury Program staff views family as important members of the rehab team because you have information about the patient that is important to consider when developing a comprehensive treatment plan. Also, because of your pre-injury relationship with the patient, you can love and support your family member in ways that no other treatment team member can.

Dependency
Patients with brain injury often try to get family and friends to assist them in various ways, e.g., reading a menu, making a decision about clothes or a TV show, or retelling a story. This occurs when the patient finds that performing these “relatively simple” tasks is very difficult.

You and other family members may want to comply with these requests out of kindness as it is difficult to watch a loved one struggle and sometimes fail. However, allowing a patient to try, to struggle, and at times, to fail is often the basis for learning or relearning a skill. Please be open to staff as they offer suggestions about how best to assist your loved one, i.e., maintain the right distance that encourages a sense of personal confidence and independence.

Encouragement
We have found that in some cases, the encouragement given by family members, even when done gently and lovingly, may be experienced by the patient as pressure to perform. Additionally, this can be embarrassing particularly when the patient is aware of his/her inadequacies when performing even the simplest of tasks. In these situations, the family and staff will talk together to try to establish a sound therapeutic plan. The staff will offer you many suggestions about how best to interact with your loved one. Please do not take any comments or suggestions from staff as a personal criticism. They are meant to be helpful.
Family Teaching
Participating in family teaching is one of the most important ways family members and caregivers can help the patient. Family teaching includes coming to Frazier Rehab for the day and going through occupational, physical and speech therapies in the morning and afternoon. During these sessions, therapists will work with you and the patient to set the treatment plan that is the most functional for the patient and to help you understand the skills that remain intact and the skills that need to be improved. You will have opportunity to try techniques the therapists are using to improve the functional skills. The team is working with you and the patient to transition safely to home and to the next steps in the recovery and rehab process. The family will also have opportunity to gain knowledge and skills through training with the nurses. You may be asked to participate in some basic nursing care, such as bowel and bladder care, feeding tube management, oral care, tracheotomy care, and wound care. The purpose of asking you to do this is not to have you substitute for care provided by our nursing staff, but to prepare you to provide care for the patient at home. Doctors, psychologists, case managers and other team members will also be available for teaching, support, and answering questions as needed.

In most cases, the more frequently family attends family teaching the better. Primary caregivers are encouraged to come as often as possible and spend the day learning. If full days are not possible, you are encouraged to come for half days. Let the team know what days and times you are able to attend.
It is crucial for the patient’s safety and well-being that family is present to learn how to best care for the patient as they prepare for discharge. Recovery from brain injury happens over an extended period of time. Generally you can expect significant changes for the patient at least in the early stages of recovery and attending family teaching will help you to be prepared for changes you may encounter at home.

Another form of family teaching occurs by attending Brain Injury education classes. Frazier Rehab offers a twice weekly Brain Injury education class on Monday and Friday from 10:30-11:30 a.m. in the 7th floor team and family conference room. A series of topics related to brain injury is covered over a two-week period. The topics are relevant to family members of brain injury survivors. Questions are welcomed leading to discussions that enhance the learning. Family members are encouraged to go through the entire two week series beginning the Monday or Friday after the admission to Frazier Rehab.

This series is open to any number of family members and may be repeated. Patients who have progressed to a level of recovery that would allow them to benefit from classroom style education and discussion are scheduled to attend the classes.

Taking Care of Yourself
Caring for a family member with a brain injury presents emotional and physical challenges for you and your family. Normally, family members experience grief, anxiety, sadness, and anger. These may contribute to disturbances of sleep, appetite and energy levels. Dealing with brain injury is not easy.

A family’s health and well-being are critical to the patient’s recovery. If you “burn out” or become sick, you will have little to offer the patient or other family members. Unfortunately, the staff sees too many family members sacrificing their health by trying to stand watch at the hospital many hours each day.
If you are caught in this dilemma, staff will encourage you to view the situation more objectively. You may find it helpful to meet with a psychologist, a trained professional on the treatment team, who has specific knowledge about your loved one. The psychologist can offer guidance, support and relevant information. Confidential appointments can be made with the psychologist directly or through another team member.

In summary, taking good care of yourself is one of the most helpful things you can do for your injured family member.

**Questions and Concerns**

You will have many questions and concerns about your loved one during hospitalization. Regular attendance in all family teaching activities and attending the Monday and Friday morning education classes, will answer many of your questions and address many of your concerns.

There are two other ways to deal with your questions and concerns. The first is to contact specific members of the treatment team. For example, the nurse can be helpful in addressing questions about daily care, physical functioning, visitation and special precautions for care. The case manager can address issues related to discharge planning, community resources and medical insurance.

Secondly, specific concerns about progress and treatment recommendations can be addressed during weekly rounds and during a team and family meeting with all team members present. You may request such a meeting by contacting your case manager.

Many variables are considered when deciding upon a discharge date. The most appropriate setting for continued rehab is a primary consideration. Some other factors include the progress the patient is making in treatment, availability of family, the need for further services, limitations of individual insurance policies/coverage, and equipment needs. If persistent one-on-one nursing care and/or constant medical monitoring is needed, a transfer to another facility may occur. Suicidal behavior requires a transfer to a more appropriate setting, and disruptive behavior that interferes with providing rehab services or creates patient safety issues may require discharge from Frazier Rehab.

Since discharge needs vary from patient to patient, each case is addressed individually. The case manager will coordinate the discharge plan and discuss the development of discharge plans weekly with the family spokesperson. The entire treatment team will participate in this planning. Our goal is to prepare for a well-organized transition to home.

As a general rule of thumb a patient will need to demonstrate progress on a weekly basis in order to remain in the rehab hospital. Insurance companies require that the treatment team report weekly on the patient’s progress or lack of progress. The criteria that insurance companies use to determine coverage and length of time they will pay for services varies from company to company. Any questions or concerns about continued coverage should be directed to your case manager. Discharge planning may also be discussed when you meet with the rest of the treatment team during the team and family meeting.
Transition from Rehab to School
Following a brain injury, your child may have special needs in relation to school. Often changes in the school program will be necessary for your child to progress academically. A team effort is required for a smooth transition. You as parent/guardian will be a vital member of the team.

Currently, there are two Federal laws that set the standard for services within each state, but variations in educational services from state to state.

- **The Individuals with Disabilities Education Act (IDEA): Public Law 101-476** makes certain that federal funds are available. This law sets guidelines for delivering services to children from ages 3 – 21 years who are in need of special education services. There are four steps to this process:

  1. Identify the need for special services. A doctor, parent or agency can make the referral.
  2. Evaluation to determine the child’s learning strengths and weaknesses. A parent/guardian must give permission for this step.
  3. Individual Education Plan – Goals and objectives are created by a team of professionals including the parents/guardian. All services will be delivered in a setting that is least restrictive for the child.
  4. Review -The plan (IEP) is to be reviewed at least annually but more frequent reviews are usually recommended for a child with brain injury.

- **The Rehabilitation Act: Section 504** is less formal but provides a list of accommodations to help the child succeed in the school setting.

  o In the event that your child attends a private school, the rehab team will work with the school and provide essential information for the reentry process. Private schools are not subject to Federal Law requirements for special education.

  o For children under the age of 3, the rehab team will contact the federal program called **First Steps**, coordinated through the Cabinet for Health Services in each state. The program provides early intervention for children with developmental delay or with particular medical conditions are known to cause developmental delay.

  o You are encouraged to speak to the case manager and ask questions about the school reentry process. You as parents/guardians are the most valuable ongoing source of information. The key to successful reintegration of your child back into the school system is communication and education about brain injury for all parties involved.
## Areas of the Brain

<table>
<thead>
<tr>
<th>Lobe</th>
<th>Location</th>
<th>Function</th>
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</thead>
<tbody>
<tr>
<td><strong>Frontal Lobe</strong></td>
<td>The frontal lobe is located in the area around your forehead.</td>
<td>Emotional control Reasoning &amp; judgment Voluntary movement Motivation &amp; Initiation Social behavior Creativity Expressive language Problem solving Planning &amp; Decision making</td>
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<tr>
<td><strong>Parietal Lobe</strong></td>
<td>The parietal lobes are located behind the frontal lobes, above the temporal lobes, and at the top back of the brain.</td>
<td>to the tactile senses: Touch Pain Taste Pressure Temperature Spatial relationships</td>
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<tr>
<td><strong>Temporal Lobe</strong></td>
<td>The temporal lobes are located on both sides of the brain and just above the ears.</td>
<td>Hearing Memory Meaning Language comprehension Learning Interpreting auditory stimuli Processing auditory stimuli.</td>
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<tr>
<td><strong>Occipital Lobe</strong></td>
<td><strong>Location</strong></td>
<td><strong>Function</strong></td>
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<tr>
<td><img src="image" alt="Occipital Lobe" /></td>
<td>The occipital lobe is found in the back of the brain.</td>
<td>Related to the brain's ability to recognize objects</td>
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<td>Visual perception</td>
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<thead>
<tr>
<th><strong>Cerebellum</strong></th>
<th><strong>Location</strong></th>
<th><strong>Function</strong></th>
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<tbody>
<tr>
<td><img src="image" alt="Cerebellum" /></td>
<td>The cerebellum is located at the base of the brain, underneath the occipital lobe.</td>
<td>Balance Equilibrium</td>
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<thead>
<tr>
<th><strong>Brain Stem</strong></th>
<th><strong>Location</strong></th>
<th><strong>Function</strong></th>
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<tbody>
<tr>
<td><img src="image" alt="Brain Stem" /></td>
<td>The brain stem is located at the bottom of the brain and connects the brain to the spinal cord.</td>
<td>Related to life-sustaining actions:</td>
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<td></td>
<td></td>
<td>Breathing</td>
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RANCHO LOS AMIGOS COGNITIVE RECOVERY SCALE

The Rancho Los Amigos Cognitive Recovery Scale (RLA) is one of several scales developed to identify stages or levels of brain injury recovery. This scale begins with Level 1 and progresses through Level 10. The treatment team will use this scale as a guide when developing each patient’s treatment plan. The team’s treatment strategy will change if the patient progresses from one Rancho Level to the next. Each person with a brain injury will move through the Rancho Levels at various speeds. Patients will be discharged from the hospital prior to progressing through all of these levels. Therapy services often continue after discharge.

Most patients do not require a lot of stimulation during mid-range Rancho Levels (4,5,6). Instead they usually get more than enough stimulation for the whole day by attending therapies. Brief, quiet visits are most helpful. Stimulation can be anything that excites the patient, such as TV, radio, lights, talking, seeing several people at once, and being in a hallway or noisy place. The patient may not outwardly show over stimulation and their expression may be blank but still be over stimulated on the “inside”. They may, for example, sweat or breathe rapidly when over stimulated.

Recovery Levels

Level I  (1). **No response**: (to any stimulus): Total Assistance – the patient appears to be in a deep sleep or coma and does not respond when presented with visual, auditory, tactile, proprioceptive, vestibular or painful stimuli.

Level II  (2). **Generalized response**: Total Assistance – the patient moves around, but movement does not seem to have a purpose or consistency. This reaction may be due to deep pain. Patient may open their eyes but do not seem to be focused on anything in particular.

Level III  (3). **Localized response**: Total Assistance – the patient begins to move their eyes and look at specific people and objects. They turn toward or away from loud voices or noise. The patient at level 3 may follow a simple command such as, “squeeze my hand.” Responses are inconsistent and directly related to the type of stimulus.

Level IV  (4). **Confused and agitated**: Maximal Assistance – the patient is very confused and agitated about where he or she is and what is happening in the surroundings. At the slightest provocation, the patient may become very restless, aggressive, or abusive (verbally and/or physically). The patient may enter into incoherent conversation in reaction to inner confusion, fear or disorientation. Motor activities that could be detrimental are attempted. Safety and deficit awareness are important issues.

Level V  (5). **Confused, inappropriate, non-agitated**: Maximal Assistance – the patient is confused and does not make sense in conversations, but may be able to follow simple directions. Stressful situations may provoke some upset, but agitation is no longer a major problem. Patients may experience some frustration as elements of memory return. Follows tasks for 2-3 minutes but is easily distracted by environment.

Level V1  (6). **Confused, appropriate**: Moderate Assistance – the patient’s speech makes sense, and he or she is able to do simple things such as dressing, eating, and teeth
brushing. Although patients know how to perform a specific activity, they need help discerning when to start and stop. Learning new things may also be difficult. The patient's memory and attention are increasing and he or she is able to attend to a task for 30 minutes.

Level VII  
(7). **Automatic appropriate**: Minimal Assistance for daily living skills – the patient can perform all self-care activities and are usually coherent. They have difficulty remembering recent events and discussions. If physically able, can carry out routine activities. Rational judgments, calculations, and solving multi-step problems present difficulties, yet patients may not seem to realize this. Needs supervision for safety.

Level VIII  
(8). **Purposeful, Appropriate: Stand-By Assistance**: The patient is independent for familiar tasks in a distracting environment for one hour. He or she acknowledges impairments but has difficulty self-monitoring. Emotional issues such as depression, irritability and low frustration tolerance may be observed.

Level IX  
(9). **Purposeful, Appropriate: Stand-By Assistance on Request**: The patient is able to shift between tasks for two hours. Requires some assistance to adjust to life demands. Emotional and behavioral issues may be of concern.

Level X  
(10). **Purposeful, Appropriate: Modified Independent**: The patient is goal directed, handling multiple tasks and independently using assistive strategies. Prone to breaks in attention and may require additional time to complete tasks.

**Description and family strategies for each RLA Level:**

**Level I - No Response: Total Assistance**
- Complete absence of observable change in behavior when presented visual, auditory, tactile, proprioceptive, vestibular or painful stimuli.

**Level II - Generalized Response: Total Assistance**
- Demonstrates generalized reflex response to painful stimuli.
- Responds to repeated auditory stimuli with increased or decreased activity.
- Responds to external stimuli with physiological changes generalized, gross body movement and/or not purposeful vocalization.
- Responses noted above may be same regardless of type and location of stimulation.
- Responses may be significantly delayed.

**Level III - Localized Response: Total Assistance**
- Demonstrates withdrawal or vocalization to painful stimuli.
- Turns toward or away from auditory stimuli.
- Blinks when strong light crosses visual field.
- Follows moving object passed within visual field.
- Responds to discomfort by pulling tubes or restraints.
- Responds inconsistently to simple commands.
- Responses directly related to type of stimulus.
• May respond to some persons (especially family and friends) but not to others.

**Family Strategies for Level I-III**

Family members should not interpret the agitation and confusion as regression, but rather as progress. The individual is not aware of what he/she is doing and is likely to remember little of this period of time.

When relating to a person at a low Rancho level, family and friends should:

- Use calm, reassuring tones, and in a normal tone of voice
- Tell the person what you are going to do before you do it. For example, “I’m going to move your leg.”
- Speak in short phrases, keeping comments and questions short and simple. For example, instead of saying, “Can you turn your head to me?” say, “Look at me.”
- Allow the person extra time to respond. Sometimes responses are inconsistent, incorrect or do not occur.
  - Have one person speak at a time.
- Tell the person who you are, where they are, why they are in the hospital, and what day it is.
- Speak in concrete terms. Discuss things that are happening near the person.
- Bring in favorite belongings and pictures of family members and close friends.
- Bring in familiar activities, such as favorite music, talking about family and friends, reading favorite magazines or books out loud, watching favorite TV shows or videos to stimulate senses and memory.
- Gently massage lotion on the person’s arms, legs, back and stomach. This not only increases the person’s tactile awareness but also helps prevent skin breakdown.
- Touch the person on the face, arm, or leg with various textures like a washcloth, fuzzy toy, flannel, plastic, rubber, etc. for sensory stimulation.
- Use a variety of soaps, fragrances and lotions to stimulate smell.
- Keep a notebook nearby for family and visitors to sign. Instruct them to log in any noticeable responses to stimuli.
- Limit the number of visitors to 2-3 at a time.
- Keep the room calm and quiet.
- Maintain rest periods.
- Always assume the person with brain injury can understand what is being said. Never discuss subjects that may be upsetting in front of the person.
**Level IV - Confused/Agitated: Maximal Assistance**

- Alert and in heightened state of activity.
- Purposeful attempts to remove restraints or tubes or crawl out of bed.
- May perform motor activities such as sitting, reaching and walking but without purpose or upon another's request.
- Very brief and usually non-purposeful moments of sustained alternatives and divided attention.
- Absent short-term memory.
- May cry out or scream out of proportion to stimulus even after its removal.
- May exhibit aggressive or flight behavior.
- Mood may swing from euphoric to hostile with no apparent relationship to environmental events.
- Unable to cooperate with treatment efforts.
- Verbalizations are frequently incoherent and/or inappropriate to activity or environment.

**Family Strategies for Level IV**

Rancho Level IV is characterized by: Emergence of Agitation and Confusion

Family members should not interpret the agitation and confusion as regression, but rather as progress. The individual is not aware of what he/she is doing and is likely to remember little of this period of time. When relating to a person at Rancho Level IV, family and friends should:

- Tell the person where they are and reassure them that they are safe.
- Bring in family pictures and other personal items. These may make the person feel more comfortable as well as stimulate memory.
- Allow the person as much movement as is safely possible; Take person for rides in a wheelchair, if permitted.
- Not force the person into activities; listen to them and follow their lead, as is safely possible.
- Provide frequent rest breaks to minimize episodes of increased restlessness and agitation.
- Keep the room quiet and calm; if the person is agitated, turn off the TV and radio.
- Limit visitors to 2-3 at a time.
Level V - Confused, Inappropriate Non-Agitated: Maximal Assistance

- Alert, not agitated but may wander randomly or with a vague intention of going home.
- May become agitated in response to external stimulation, and/or lack of environmental structure.
- Not yet oriented to person, place or time.
- Frequent brief periods, non-purposeful sustained attention.
- Follows tasks for 2-3 minutes before being easily distracted.
- Severely impaired recent memory, with confusion of past and present in reaction to ongoing activity.
- Absent goal directed, problem solving, self-monitoring behavior.
- Often demonstrates inappropriate use of objects without external direction.
- May be able to perform previously learned tasks when structured and cues provided.
- Able to respond appropriately to simple commands fairly consistently.
- Able to converse on a social, automatic level for brief periods of time.
- Verbalizations about present events may become inappropriate and confabulatory.

Family Strategies for Level V
Rancho Level V is characterized by Continued Confusion with Inappropriate but Non-Agitated Behavior. Conversations can be confused, unusual, insistent, humorous or bizarre.

When relating to a person at Rancho Level V, family and friend should:
- Avoid a tendency to reward or play into inappropriate behavior.
- Use redirection and distraction to stop inappropriate behavior. Due to cognitive limitations, reasoning at this stage is not successful, but redirection is often easy and effective, since the patient is so easily distracted.
- Not assume that the person will remember what you tell them. Persons at Rancho Level V often require frequent repetition.
- Keep comments and questions short and simple.
- Remind the person of day, date, name and location of the hospital as well as why they are in the hospital.
- Help the person get organized for tasks and activities.
- Bring in familiar pictures and personal objects from home.
- Limit visitors to 2-3 at a time.
- Give patient frequent rest periods.
Level VI - Confused, Appropriate: Moderate Assistance

- Inconsistently oriented to person, time and place.
- Able to attend to highly familiar tasks in non-distracting environment for 30 minutes with moderate redirection.
- Remote memory has more depth and detail than recent memory.
- Vague recognition of some staff.
- Able to use assistive memory aide with maximum assistance.
- Emerging awareness of appropriate response to self, family and basic needs.
- Moderate assist to problem solve barriers to task completion.
- Supervised for old learning (e.g. self-care).
- Shows carry over for relearned familiar tasks (e.g. self-care).
- Maximum assistance for new learning with little or no carry over.
- Unaware of impairments, disabilities and safety risks.
- Consistently follows simple directions.
- Verbal expressions are appropriate in highly familiar and structured situations.

Family Strategies for Level VI

Rancho Level VI is characterized by Continuing Confusion but Emergence of Appropriate Behavior. When relating to a person at Rancho Level VI, family and friends should:

- Expect the person to be unaware of their deficits and the need for increased supervision and rehabilitation. They may insist nothing is wrong with them and that they can go home and resume their usual activities.
- Realize that redirection is not effective and arguments can be frequent and prolonged.
- Encourage the person to participate in and continue to stay in rehabilitation services.
- Understand that the person may react to their head injury in a non-emotional manner and may appear not to care that they are injured. Family should know that this behavior is related to their stage of recovery.
- Realize frequent repetition may be necessary.
- Discuss and journal activities that have happened during the day, to help the person improve his/her memory.
- Help with starting and continuing activities.
Level VII - Automatic, Appropriate: Minimal Assistance for Daily Living Skills

- Consistently oriented to person and place. Some assistance for orientation in unfamiliar environment.
- Able to attend to highly familiar tasks in a non-distraction environment for at least 30 minutes.
- Minimal supervision for new learning and demonstrates carry-over of new learning.
- Initiates and carries out familiar personal and household routine but has poor recall for activities.
- Superficial awareness of his/her condition but unaware of specific impairments and disabilities and the limits they place on his/her ability and safety in carrying out household and community activities.
- Minimal supervision for safety in routine home and community activities.
- Unrealistic planning for the future and overestimates abilities.
- Unable to think about consequences of a decision or action, appears oppositional/uncooperative.
- Unaware of others' needs and feelings. Unable to recognize inappropriate social interactions.

Family Strategies for Level VII

Rancho Level VII is characterized by Automatic, Appropriate Behavior. Most persons at this level are at home, and are returning to school and possibly work environments. Deficits in memory, information processing, fatigue, behavioral control, and social interactions may hamper performance in these settings, and may be perceived as intentional. Intervention at this level should include persons involved at the school, community, or work environments. Family members should know that judgment may still be impaired and close supervision may still be necessary. Support is important due to the transitional nature of this level of recovery.

When relating to a person at Rancho Levels VII, family and friends should:

- Treat the person in the same way as they did before the brain injury. For example, provide guidance and assistance in decision-making but respect the individual's opinions.
- Speak with normal speech patterns and vocabulary. Simple words or phrases are no longer needed.
- Be careful about teasing or using slang, as they may misunderstand. Sometimes humor is not understood.
- Talk through problems about the person's thinking skills, problem solving or memory challenges without criticizing. Reassure the individual that problems may persist because of the brain injury.
- Encourage the person to remain in therapy, to improve their cognitive skills.
- Check with the physician regarding any restrictions on driving, sports, drinking.
• Encourage the person to use note taking and tape-recorders to help with memory deficits.
• Discuss situations where the person may have had difficulty controlling emotions.
• Talk with the person about feelings and offer outside support such as counseling and/or support groups.

Level VIII - Purposeful, Appropriate: Stand-By Assistance
• Consistently oriented to person, place and time. Able to recall and integrate past and recent events.
• Independently attends to and completes familiar tasks for 1 hour in distracting environments.
• Uses assistive memory devices to recall daily schedule, “to do” lists and record critical information.
• Initiates and carries out steps to complete familiar personal, household, community, work and leisure routines with stand-by assistance and can modify the plan when needed with minimal assistance.
• Requires no assistance once new tasks/activities are learned.
• Aware of and acknowledges impairments and disabilities when they interfere with task completion but requires stand-by assistance to take appropriate corrective action.
• Thinks about consequences of a decision or action with minimal assistance.
• Acknowledges others’ needs and feelings and responds appropriately with minimal assistance.
• Uncharacteristically dependent/independent. Overestimates or underestimates abilities.
• Able to recognize and acknowledge inappropriate social interaction behavior and takes corrective action.

Family Strategies for Level VIII
Rancho Level VIII is characterized by Purposeful, Appropriate Behavior. The person can initiate and carry out steps to complete familiar personal, household, community, work and leisure routines and can modify the plan when needed with minimal assistance. Family strategies are similar to those at level VII. When relating to a person at Rancho Levels VIII, family and friends should:
• Treat the person in the same way as they did before the brain injury. For example, provide guidance and assistance in decision-making but respect the individual's opinions.
• Speak with normal speech patterns and vocabulary. Simple words or phrases are no longer needed.
• Be careful about teasing or using slang, as they may misunderstand. Sometimes
humor is not understood.

- Talk through problems about the person's thinking skills, problem solving or memory challenges without criticizing. Reassure the individual that problems may persist because of the brain injury.
- Encourage the person to remain in therapy, to improve their cognitive skills.
- Check with the physician regarding any restrictions on driving, sports, drinking.
- Encourage the person to use note taking and tape-recorders to help with memory deficits.
- Discuss situations where the person may have had difficulty controlling emotions.
- Talk with the person about feelings and offer outside support such as counseling and/or support groups.

**Level IX - Purposeful, Appropriate: Stand-By Assistance on Request**

- Independently shifts between tasks and completes them accurately for at least two consecutive hours.
- Uses assistive memory devices to recall daily schedule, "to do" lists and record critical information for later use with assistance when requested.
- Initiates and carries out steps to complete familiar personal, household, community tasks independently, and unfamiliar personal, household, work and leisure tasks with assistance when requested.
- Aware impairments and disabilities when they interfere with a task and takes appropriate corrective action, but requires stand-by assist to anticipate a problem before it occurs and take action to avoid it.
- Able to think about consequences of decisions or actions with assistance when requested.
- Accurately estimates abilities but require stand-by assistance to adjust to task demands.
- Acknowledges others' needs and feelings and responds appropriately with stand-by assistance.
- May have low frustration tolerance and may be easily irritable. Depression may continue.
- Able to self-monitor appropriateness of social interaction with stand-by assistance.

**Level X - Purposeful, Appropriate: Modified Independent**

- Able to handle multiple tasks simultaneously in all environments but may require periodic breaks.
- Able to independently procure, create and maintain own assistive memory devices.
- Independently initiates and carries out steps to complete familiar and unfamiliar personal, household, community, work and leisure tasks but may require more than usual amount of time and/or compensatory strategies to complete them.
- Anticipates impact of impairments and disabilities on ability to complete daily living tasks
and takes action to avoid problems before they occur but may require more than usual amount of time and/or compensatory strategies.

- Able to independently think about consequences of decisions or actions but may require more than usual amount of time and/or compensatory strategies to select the appropriate decision or action.
- Accurately estimates abilities and independently adjusts to task demands.
- Able to recognize the needs and feelings of others and automatically respond in appropriate manner.
- Periodic periods of depression may occur.
- Irritability and low frustration tolerance when sick, fatigued and/or under emotional stress.
- Social interaction behavior is consistently appropriate.
RANCHO LOS AMIGOS MEDICAL CENTER
PEDIATRIC LEVELS OF CONSCIOUSNESS INFANT TO 2 YEARS

V. NO RESPONSE TO STIMULI
   A. Complete absence of observable change in behavior to visual, auditory, or painful stimuli.

IV. GIVES GENERALIZED RESPONSE TO SENSORY STIMULI
   A. Gives generalized startle to loud sound.
   B. Responds to repeated auditory stimulation with increased or decreased activity.
   C. Gives generalized reflex response to painful stimuli.

III. GIVES LOCALIZED RESPONSE TO SENSORY STIMULI
   A. Blinks when strong light crosses visual field.
   B. Follows moving object passed within visual field.
   C. Turns toward or away from loud sound.
   D. Gives specific, localized response to painful stimuli.
   E. Spontaneous, non-purposeful movement of extremities.

II. RESPONSIVE TO ENVIRONMENT
   A. Responds to name.
   B. Recognizes mother or other family members.
   C. Enjoys imitative vocal play.
   D. Giggles or smiles when talked to or played with.
   E. Fussing is quieted by soft voice or touch.

I. INTERACTS WITH ENVIRONMENT
   A. Shows active interest in toys; manipulates or examines before mouthing or discarding.
   B. Watches other children at play; may move toward them purposefully.
   C. Initiates social contact with adults; enjoys socializing.
   D. Shows active interest in bottle.
   E. Reaches or moves toward person or object.

RANCHO LOS AMIGOS MEDICAL CENTER
PEdiATRIC LEvELs OF CONSCIOUSNESS PRE-SCHOOL AGE 2-5 YEARS

I. ORIENTED TO SELF AND SURROUNDINGS
A. Provides accurate information about self.
B. Knows he is away from home.
C. Knows where toys, clothes, etc. are kept.
D. Actively participates in treatment program.
E. Recognizes own room, knows way to bathroom, nursing station, etc.
F. Is potty-trained.
G. Initiates social contact with adult. Enjoys socializing.

II. RESPONSIVE TO ENVIRONMENT
A. Follows simple commands.
B. Initiates purposeful activity.
C. Refuses to follow commands by shaking head or saying "no".
D. Imitates examiner's gestures or facial expressions.
E. Responds to name.
F. Recognizes mother or other family members.

III. GIVES LOCALIZED RESPONSE TO SENSORY STIMULI
A. Blinks when strong light crosses visual field.
B. Follows moving object passing within visual field.
C. Turns toward or away from loud sound.
D. Gives specific localized response to painful stimuli.
E. Spontaneous, non-purposeful movement of extremities.

IV. GIVES GENERALIZED RESPONSE TO SENSORY STIMULI
A. Gives generalized startle to loud sound.
B. Responds to repeated auditory stimulation with increased or decreased activity.
C. Gives generalized reflex response to painful stimuli.

V. NO RESPONSE TO STIMULI
A. Complete absence of observable change in behavior to visual, auditory, or painful stimuli.

Frequently Asked Questions
Friends and family of newly injured patients often have many questions about recovery stages, rehabilitation and adaptation. Answers to many of the frequently asked questions are discussed below.

What is a brain injury?
A brain injury is a physical and chemical event that is often the result of a blow to the head sustained from a fall, an automobile accident, sports injury, etc. However, brain injury can also occur when there is a lack of oxygen to the brain (anoxia), with brain tumors, when certain illnesses or infections are present, and following certain types of cerebral hemorrhage. An individual does not have to lose consciousness to sustain a brain injury.

In situations where brain injury results in a very brief period (minutes) of unconsciousness or coma, the recovery may be complete or nearly complete. When the duration of the coma extends to hours, days, and weeks, the person is increasingly more likely to be left with a range of deficits in physical, intellectual, communicative, behavioral and/or emotional functions. Even mild brain injuries may produce changes in reasoning, perception and person-to-person relations. Such changes can compromise work-related abilities as well as family interaction. Such problems can have a devastating impact on both the patient and their family.

Can a person recover from brain injury?
Yes, but in contrast to the short time it takes to become injured, the recovery from a brain injury is measured in weeks, months and even years. Recovery is usually most rapid shortly after the injury (the first six months) and slows down with the passage of time. Though some people with severe brain injuries appear to have no noticeable problems and may function relatively independently, many subtle problems are usually present. Others require constant care for the rest of their lives. Our experience is that individuals continue to show improvements years after the injury or illness.

What should I expect from myself?
Most people are shocked by the news that a loved one has suffered a brain injury. Most experience a flood of thoughts and feelings, some of which may be disturbing. Some examples of these feelings are:

- Guilt is a common reaction to a loved one’s brain injury. It often comes with the idea that “If I had done something differently, the brain injury wouldn’t have happened.” Often, it is best to acknowledge such feelings (perhaps with a member of the Treatment Team or another loved one) and put them aside until they can be viewed in a broader perspective.

- Anger is often directed at other family members, the doctors and other caregivers. Anger is a strong emotion and sometimes is justified. Frequently, the anger one feels after such a tragedy is misdirected. Again, it is helpful to become aware of the anger, and discuss your feelings with a trusted person or therapist.

- Shock affects people differently. Some people show their emotions outwardly; others appear outwardly calm yet hide inner turmoil. For many who experience shock, they may feel anxious, as if they were having a bad dream. Experiencing shock is a normal response and it takes time to resolve. Not progressing past the “shock” can be troublesome.
Where do I turn for answers if I have additional questions?
Members of Frazier Rehab’s Brain Injury Program team will try to thoroughly answer any questions you may have today or in the future.

If I need guidance, where should I turn?
Stress is commonly experienced by families of a brain-injured patient. Accordingly, families must take good care of themselves so that they remain healthy and able to participate in the recovery process of their loved one. Families often become “overwhelmed” and may benefit from talking with the team psychologist for counseling and support. Signs of stress may include:

- Poor self-care
- An overwhelming sense of guilt or worthlessness
- Change in sleep or appetite
- Feeling lost or alone with no one to turn to for help
- Excessive use of alcohol or drugs
- A sense of helplessness and a belief that nothing helpful can be done
- Inability to comprehend what is being said about the patient

What is a brainstem injury?
The brainstem is part of the brain that connects the larger portion of the brain with the rest of the spinal cord. Many functions are tightly packed in the brainstem and its position at the base of the brain leaves it quite susceptible to injury. The brainstem controls consciousness, breathing, heartbeat, eye movements, pupil reactions, swallowing, facial movements, thirst, hunger, wake/sleep cycle, and equilibrium. Furthermore, all sensations going to the brain, as well as signals from the brain to the muscles, must pass through the brainstem. The brainstem is often damaged in severe brain injuries, but is almost never the only part of the brain which is injured.

Temperature control is a common problem with brain injury survivors, i.e., the person’s normal response to changes in temperature is interrupted, and the brain responds in an abnormal way. Temperature elevations without clinical correlation, such as infection, are often seen. Severe sweating without a rise in temperature is also seen frequently. Accordingly, the body temperature of a person with a brain injury is monitored throughout the course of recovery. Elevations in temperature are attended to systematically to rule out the presence of an infection.

What is a coma?
Coma is defined in a number of ways. One of the most useful ways to define coma is that it is a sleep-like state in which the injured person does not speak and cannot obey commands. People are usually no longer considered to be in a coma if they open their eyes, speak, or can obey simple commands. Coma in people with brain injury almost always results from injury to several parts of the brain. In very rare circumstances, a major portion of the brain is spared and only the brainstem is injured. Prolonged coma in the vast majority of cases implies injury to all parts of the brain including the brainstem.

What is a vegetative state?
The term vegetative state is used to describe someone who is awake but unaware of themselves or their environment. A person in a vegetative state will open their eyes, demonstrate sleep-wake cycles and basic reflexes, such as blinking when they are startled by a loud noise or withdrawing a hand when a painful stimulus is applied. However, they do not demonstrate any purposeful response to sensory or cognitive stimuli, such as following an object with their eyes or responding to command.
What is a minimally conscious state?
The term minimally conscious state describes a person who shows intermittent but clear evidence of awareness of themselves or their environment. This classification is given if they can respond to command; for example, moving a finger reliably when asked to do so.

What is locked-in syndrome?
This term is used when someone has had a specific type of injury resulting in damage to the brainstem. Someone who is locked-in is both awake and aware, but they are unable to respond because they are paralyzed and unable to speak. Typically, persons in this condition are able to communicate only by up and down eye movement.

Does good nutrition help recovery?
Adequate nutrition is very important for maximum recovery from a brain injury. Brain injured persons need a tremendous amount of calories, and it is not unusual for a brain injured person to lose as much as 25% of his/her body weight. Providing adequate nutrition can be very difficult. Nutritional needs are assessed immediately after injury and the doctor orders a proper diet and the method of feeding. Often supplemental vitamins and minerals are needed. Oral diets (eating by mouth) may vary from a pureed diet to a regular diet. Various types of tube feedings are used for those patients who are not able to handle oral diets. For example, a person may be fed by a nasogastric tube (feedings administered by a tube inserted into a person’s nose, down the back of the throat, and into the stomach), a gastrotomy tube (a tube surgically placed through the abdominal wall directly into the stomach) or via a jejunostomy tube (a tube surgically placed through the abdominal wall directly into the small intestine). Occasionally, a brain-injured person may need to be fed through an IV (intravenous) line. Medicines can be administered through IV lines or feeding tubes too.

Nutritional evaluations are performed by a dietitian throughout the recovery process. The patient’s weight, caloric and fluid intake, urinary output and bowel function are monitored and assessed frequently. Optimal nutrition remains a high priority throughout the recovery process.

It is important to understand the type of diet the patient is on and to feed them only the appropriate types of food. Feeding a patient regular food or liquid when they have a weak swallow can lead to medical complications. Please discuss swallowing and diets with your nurse and speech language pathologist.

What is a seizure?
A seizure is the result of abnormal brain activity and is common in persons with severe brain injury. Seizures are not good for the brain and it is desirable to control them. Medication will be used to control seizures. Some people with brain injury continue to take medicine to prevent seizures for several years after injury. Seizures, which can start long after the injury, are referred to as postrauomatic epilepsy. These are seen more frequently in people who have had a penetrating injury to the brain, people who have had blood clots in the brain and those who have had seizures in the first weeks after the injury. Blood levels of anticonvulsant medications are routinely monitored in effort to prevent seizures. Suddenly stopping seizure medication can bring on seizures in people who would not otherwise have had them; therefore, it is important to take these medications as directed. The physician will advise the patient when it is time to reduce or eliminate a medication. Alcohol and seizure medicine do not mix!

What can I do to help?
Frazier Rehab Institute’s Brain Injury Program encourages the family to become involved in the daily care of their loved one. It is important to let the nursing staff and physician decide when and how much care is helpful. Family members need to be asked how much they wish to be involved
so that adequate decisions can be made. Formal opportunities for such discussions occur at Frazier Rehab Institute during Family Teaching, and weekly Educational Group classes.

**What therapies are best?**
The “best” therapies for a brain injury survivor can only be determined after careful assessment. Most patients will require many different types of therapy. However, a therapy that is essential for one person may not be necessary for another. The Frazier Rehab team stays current with evidence based practice to be sure that the treatments given each patient are appropriate and maximally therapeutic.

**How is brain injury measured?**
Certain tests, such as a CT (computerized tomographic) scan, EEG (electroencephalogram) or BAER (brainstem auditory evoked response) provide some information about the extent of the injury.
Neuropsychological evaluation is the most sensitive assessment in determining the extent and type of brain behavioral disturbances and strengths. However, much can be learned about brain function by careful observation of speech, behavior, physical movement, learning, memory and judgment.

**Does the brain heal itself?**
Current research indicates that even though parts of the brain may be damaged, destroyed or missing, remaining parts can learn how to take over the functions that were lost. It appears that the brain cells called neurons that are next to damaged brain areas can reconnect pathways between other neurons, forming new circuits that can resume some of the lost function. This is called neuroplasticity. Also, mirror neurons located on the opposite side of the brain from the damaged area, can become involved in roles that the injured region used to have. A goal of rehabilitation is to stimulate the brain to re-form lost circuits.

**What is posttraumatic amnesia?**
Coming out of coma is not just “waking up” as people often imagine or as television often depicts. Most typically, it is a gradual process of regaining contact with the world. The kind of memory that is most often affected is the ability to continuously remember the events of the day.

Posttraumatic amnesia is a state when a person with brain injury is awake but unable to recall what happened just a few hours or even a few minutes ago. A person in this state may appear confused and occasionally disoriented. People who have fully recovered from their injury usually have only confused perceptions at this stage of recovery, if they remember it at all.

**What causes agitation?**
When the brain is injured, it is unable to accurately process information, to filter out distractions and to plan appropriate responses to people and surroundings. In essence, the brain has lost the ability to guide the person’s actions. During this stage of recovery, states of extreme irritability are often present. Verbal and physical aggression are common at this stage and are often distressing to family and friends.

It is important for family to remember that these states are beyond the patient’s control. Moreover, they do not imply that there has been a permanent personality change or that the survivor is in severe pain. This stage may last for weeks or until the person begins to comprehend what is happening to him/her. This stage is very taxing on family members and caregivers. The team at Frazier Rehab Institute will teach family members methods to minimize or redirect this behavior.
When does recovery stop?
Gradual recovery from brain injury may continue for several years. It is important to note, however, that recovery may stop at any stage. In the most unfortunate cases, people may survive for many years and yet be totally dependent with no awareness of their surroundings. Our experience is that this is rare.

Is all well when my loved one leaves the hospital?
Many people with brain injury have continuing problems even after they leave the hospital. This is particularly true for those who have had a prolonged period of coma. Problems with complex thinking, emotional control, personality change and memory are common. Both the patient and the family may be frustrated and disturbed by these continued difficulties.

Setbacks in self-care, independence and life-style goals are not unusual. To assist with some of these setbacks, the rehab treatment team will likely recommend outpatient therapies or a comprehensive, day treatment program.

Is there anything my loved one should avoid following brain injury?
Having a brain injury raises the risk for potential complications – including increased risk of a subsequent brain injury. In order to maximize recovery, the following precautions are strongly encouraged. Please note that this is a general list of recommendations for a person with a brain injury. Consult with your physician for specific questions/concerns.

The following activity precautions are strongly recommended for all persons who have sustained a brain injury:
• Always wear a seat belt. Children should be placed in a child safety seat.
• Adults and adolescents who plan to drive must complete the driver’s evaluation and possibly the driver’s course for individuals who have sustained a brain injury.
• Always wear a helmet when biking, roller-skating, roller blading or skate boarding.
• Avoid use of tobacco, alcohol, or illicit drugs.
• Use equipment to reduce risk of falls (as recommended by your therapy team). This may include use of rails, grab bars, non-slip mats, rubber-soled shoes/sticky socks, or taking steps to improve lighting/reduce trip hazards.
• Utilize modified diet/swallowing compensations as directed by your Speech Therapist (if applicable) to reduce risk of pneumonia.
• Be aware that your brain may be more sensitive to overstimulation (such as being in a large crowd of people/noisy environment) and require a quiet and calm space for breaks.
• Be alert for signs of emotional changes, such as depression, anxiety, and anger management problems, which are more common after a brain injury. Consult with your physician if you are experiencing ongoing emotional problems.
• In case of a mental health emergency, 24/7 assistance is available:
  o National Suicide Prevention Lifeline: 800-273-TALK (8255)
The following precautions are recommended during the first two years for everyone who has sustained a brain injury, with exceptions to be approved by your physician:

- Do not drive or ride mopeds, 4-wheelers, motorcycles, jet skis, or any other open vehicle.
- No diving into water.
- No water/snow skiing or “tubing.”
- No contact sports including football, basketball, soccer, volleyball, wrestling, hockey, boxing, horseback riding, etc.
- No hunting, firing range, guns, heavy machinery, or power tools.
- No amusement park rides.

Some medications (even ones available over-the-counter) can be harmful for those with a brain injury. Speak with your rehab physician before taking the following medications:

- Medications with alcohol content (such as some cough medicine and laxatives)
- Medications with pseudoephedrine listed as an ingredient
- Medications with codeine
- Medications that may cause a sedative-type effect
- Antidepressant medications (unless prescribed by your rehab doctor)
- Allergy medications

If you or your primary care physician have any questions about medication issues, please contact your rehab doctor. Remember: never stop taking any medications that were prescribed by your rehab doctor – contact your doctor first!

What can families do to help?
Frazier Rehab Institute's Brain Injury Program encourages the family to become involved in the daily care of their loved one. Families often decorate the patient’s room with photos of family and friends, cards, or favorite belongings. The therapists may ask you what type of music or leisure activities the patient enjoys. You could bring in items to use during therapy sessions. Many families have found it helpful to keep a journal or scrapbook recording the day-to-day or week-to-week recovery process.

When visiting, avoid talking about the injury, accident or rehabilitation but instead talk about everyday life such as news, neighborhood gossip or sports.

Learning as much as you can about brain injury and recovery is essential. Attend scheduled team and family meetings and family teaching, as well as the educational classes.

During family teaching, the staff will educate you about different ways to interact with your family member as they progress in therapy. It is important to know about overstimulation. Learning the signs and symptoms of overstimulation can help you know when to turn off the lights and television, leave the room, limit visitors and allow the patient downtime to relax. It is also important to learn about redirection. Redirection is a technique the team uses to prevent inappropriate behaviors or to change the subject of inappropriate conversations.

There are many ways you can learn to help. The Frazier Rehab Institute team believes family and caregivers are essential. We invite you to take advantage of our family and caregiver educational opportunities to learn more about brain injury and recovery.
Resource Guide

Where To Start

Education
The Frazier Rehab Brain Injury Program team has found that education regarding brain injury is essential for preparing families for discharge and managing future recovery needs. We encourage you to take advantage of our family and caregiver educational opportunities to learn more about brain injury and recovery.

- Attend twice weekly educational series on Monday and Friday mornings at 10:30 am.
- Attend family teaching days
- Attend any Team and Family meetings
- Research outside brain injury resources

Personal/Family
In the early phase of recovery, caregivers are the Brain Injury team’s primary target for education and information. Caregivers will be involved in decision making and coordinating recovery efforts. If you need to take time off from work to participate in the brain injury program, ask your employer about signing up for Family Medical Leave.

It is very important for caregivers to take good care of themselves by eating right, getting good rest and taking time out for themselves. The caregiver role will be more prominent after discharge and we want you to be prepared for the transition to home.

Financial
Read your health insurance policy and learn the vocabulary to better understand the benefits and limitations of the policy. For example, do you know?

- What is the lifetime maximum your policy will pay?
- What are the benefits for outpatient therapy?
- What are the benefits for the Durable Medical Equipment needed at discharge?
- Do you have an out of pocket maximum?

If the brain injury survivor is without an income, check with his/her employer for possible short or long term disability coverage. Also initiate a disability application for Social Security Disability. Your Frazier Rehab case manager is available to help you understand this information.

Community
If extended family, friends or neighbors offer to help, give them something to do. For example, ask them to feed the dog, run an errand, donate to your state’s brain injury association or another charitable organization that may be assisting you.
Financial Programs

**Acquired Brain Injury Waiver** serves adults with brain injury ages 21 to 65 years old. Qualifying individuals must meet the nursing facility level of care and financial guidelines. The program is short term, designed to help individuals transition to existing community resources and live as independently as possible in the community. To initiate an application, contact the Kentucky Medicaid Office. 502-564-5198 or 866-878-2626.

**Traumatic Brain Injury Trust Fund** serves children and adults with brain injuries. This fund was designed to supplement existing resources to provide services not covered by other sources (i.e. health insurance, vocational rehab). There are no income criteria to be eligible for this program. There is a limitation of benefits of $15,000 per person per year, with a lifetime maximum of $60,000. For more information or to initiate an application, contact the Kentucky Department for Aging and Independent Living 502-564-6930.

The following is a list of services that may be provided by the TBI Trust Fund:

- Case Management
- Physical, Occupational, Speech therapies
- Personal care assistants
- Prevocational Services
- Psychological Services
- Respite for caregivers
- Structured day programs

**Disability Income**

To apply for Social Security Disability Insurance (SSDI) or Supplemental Security Income (SSI) programs, contact the Social Security Administration at 800-772-1213, go to your local Social Security office, or visit the website at ssa.gov.

Social Security – Louisville
601 W. Broadway
Louisville, KY 40202
866-716-9671

Social Security – New Albany
121 West Spring St.
New Albany, IN 47150
812 948-5288

- Helpful information to apply for SSDI or SSI:
- Make sure all requested information is submitted with the application and deadlines are followed.
- The decision will be based on the Social Security Administration’s determination the applicant will be disabled (unable to work) for greater than one year.
- The application process can take several months before the initial decision is made.
- Some applicants are deferred. This means their progress is reviewed again after a specified period of time before a decision will be made.
- Many applicants are denied. The appeal process is explained in the denial letter.
- There are four levels of appeal and the appeal process can take up to 1-2 years.
- Individuals have found that legal assistance can facilitate the appeal process.
- If you are declared disabled, you will be awarded one of two disability programs, Social
Security Disability Income (SSDI) or Supplemental Security Income (SSI), based on the amount of money you have contributed to the Social Security tax system through your work history.

- If you are approved for SSDI, you will be eligible for Medicare after a 2 year waiting period.
- If you live in Kentucky and are approved for SSI, you will automatically be eligible for Medicaid. There is no waiting period for Medicaid.
- If you live in Indiana you will need to apply separately for IN Medicaid.

Numbers that may be helpful to complete application:

- **Health Information Departments (Medical Records)**
  - UofL Health 502-217-1900
  - Baptist Hospital East 502-897-8491
  - Norton Children’s Hospital 502-629-8700
  - Norton’s Healthcare 502-629-8766
  - Clark Memorial Hospital 812-283-2521

- **Legal Documents (Birth, Death, Marriage, and Divorce Certificates)**
  - Kentucky Bureau of Vital Statistics 502-564-4212
  - Indiana Bureau of Vital Statistics 317-233-2700
  - National Record Network 800-255-2414

- **Legal Assistance**
  - Lawyer Referral Service 502-583-1801
  - Legal Aid Society 502-584-1254

**Federal Tax Benefits**
Internal Revenue Service
800 829-1040

When building ramps or modifying your home, save your receipts. Home modifications for the disabled and some medical expenses are tax deductible. Check with your tax advisor or contact the IRS to determine your eligibility for excluded income, itemized deductions and/or tax credits.

**Advance Directives**
Advance Directives are documents, which allow you to make decisions regarding your future medical treatment.

- A **Living Will** tells health care professionals and your family whether or not you want life-prolonging treatment if you are in a terminal condition or a permanently unconscious state. Hospitals and doctors offices are required by law to ask you if you have this document.
- A **Health Care Surrogate** is a person you select to make health care decisions if you are unable. You can designate a health care surrogate within your living will document.
**Financial Planning**
The following are documents you can draft to prepare for the management of your personal affairs, financial holdings or debts and/or medical treatment decisions. You must be competent to draft these documents.

- A **Will** directs how you would like your personal belongings and financial holdings managed after your death.
- A **Power of Attorney** designates a person to handle your financial affairs in your absence. This document is only valid while you are competent.
- A **Durable Power of Attorney** designates a person to act on your behalf at the time you become incapacitated. It allows your designated person to make personal, financial and medical treatment decisions on your behalf. If you have this document, there is no need to pursue guardianship should you become incapacitated.
  - If you do not have a Durable Power of Attorney in place at the time you become incapacitated, a person who wishes to assist you with your affairs must pursue guardianship.

**Guardianship**
Disability Court for Jefferson County
514 W. Liberty St. (Old Jail Building)
Louisville, KY 40202
502 595-4933

- Process (Evaluated by court appointed interdisciplinary team) Evaluations reviewed by judge—makes decision
- Time periods for hearings
  - Emergency Guardianship 48 hours to 7 days
  - Guardianship 30 to 60 days

**Protective Services**
Most commonly, victims of abuse are children under the age of 18 years, spouses or significant others, disabled adults and the elderly. There are 5 types of abuse: physical, sexual, emotional/psychological, neglect (including self-neglect), and exploitation. State law requires that all abuse, even suspected abuse be reported. You can make an anonymous report. The Cabinet for Human Resources will not reveal the source of the referral. When reporting, provide as much information as possible regarding the situation, abuser, victim and demographics. To make a report, please call:

Kentucky
Adult Protective Services 502 595-4803
Child Protective Services 502 595-4550

Indiana
Adult Protective Services 812 285-6364
Child Protective Services 812 288-5444
State Assistance Programs

Department of Social Insurance____________________502 595-4238
Jefferson County
908 W. Broadway
Louisville, KY 40203
- KY Temporary Assistance Program
- Food Stamps
- Medicaid/KCHIP

Division of Family and Children Floyd County___________812 948-5480
824 University Woods, Suite 9
New Albany, IN 47150
- Aid to Families with Dependent Children
- Food Stamps
- Medicaid

Information and Hotlines
Alcoholics Anonymous____________________________502 582-1849
Alcohol Hotline______________________________800 331-2900
Crisis and Information Center________________________502 589-4313
Narcotics Anonymous____________________________502 499-4423
Narcotics Abuse Hotline____________________________800 234-0420

Housing

Center for Accessible Living
305 W Broadway, Suite 2
Louisville, KY 40202
502-589-6620
502-589-6690 TTY
888-813-8497
calky.org

The Center for Accessible Living in Louisville helps people with disabilities live independently in the community through the following resources:
- Accessible Area Housing Resources
- Independent Living Skills
- Personal Care Attendant Program
- Ramps (Waiting list) or ramp resources
- Peer Counseling
- Employment Programs
- Advocacy

Kentucky Housing Corporation
1231 Louisville Road
Frankfort, KY 40601
800 633-8896
www.kyhousing.org
- Lower-than-market-rate home mortgages
- Homeownership education and counseling
- Rental assistance
- Housing rehabilitation and repair programs
- Advocacy
- Employment
- Programs Housing
- Independent Living
- Skills Peer Counseling
- Personal Care Attendant Program (Extensive waiting list)
- Ramps (Waiting list)

**Wheelchair Ramp Programs**
You may be in need of a ramp for access to your home. Ramps can be rented, purchased pre-made or constructed. If you and your family want to build your own ramp, ask your Case Manager or Occupational Therapist for a brochure with detailed instructions. Unfortunately, very few insurance plans will provide funding for the cost of ramp installation. Medicare and Medicaid DO NOT provide any funding for ramp installation. The agencies listed below have financial assistance available; however, funds are very limited and most have waiting lists.

- RampUp - 800-327-5287
- Lifespan Resources - 812-948-8330
- Center for Accessible Living - 502-589-6620
- New Directions - 502-589-2272
- Kentucky Assistive Technology Network - 502-489-8285

**Wheelchair Ramp Resources**
The Minnesota Ramp Project – klownwerkz.com/ramp – This Internet resource includes many resources including the downloadable “Ramp Manual” with illustrated instructions, helpful tips, videos and discussion of ramp safety and suggestions about funding resources for ramps.

The Center for Accessible Living in Louisville KY at 502-589-6620 manages a contract from the City of Louisville for building ramps for local seniors and persons with disabilities. For more information or to obtain an application for ramp assistance through this project call CAL.

A source of reduced cost building materials is ReStore 502-805-1652, which is associated with Habitat for Humanity. In Louisville, Habitat for Humanity has three ReStore locations (Portland, Hikes Point and Papa Johns Cardinal Stadium). Builders, contractors, and home owners drop off unwanted building materials at ReStore locations and the proceeds from ReStore sales support Habitat building projects. Check the Louisville website as a possible source for low-cost materials that can be used to build your ramp: louisvillerestore.com/
Portable Ramp Suppliers: go to Google and search “Portable Wheelchair Ramps” or use this short list of companies below to see some options. Inclusion on this list should NOT be considered a recommendation.

- Amazon.com amazon.com
- AmRamp amramp.com
- Discount Ramps discountramps.com/portable_ramps.htm
- Express Ramps portable-wheelchair-ramps.com
- Gould’s Medical gouldsdiscountmedical.com
- Handi-Ramp handiramp.com

**Home Modifications**

In working with the Frazier Rehab Institute therapy team you may find modifications are needed to improve your safety and function in your home. Needed modifications may include but are not limited to:

- Ramp installation
- Bath room remodel
- Cabinet alterations
- Elevator installation
- Wood floor installation
- Handrail installation
- Larger entry door installation
- Chair lift installation
- Wide-door hinge installation
- General ease and access modifications

**Home Modification Companies**

The following private companies have provided marketing material to Frazier Rehab Institute for home modification services. The companies noted below are not endorsed by Frazier Rehab Institute and are listed for informational purposes only:

- Cap Able Living 502-309-4231 capablelivingllc.com
- Easy Home Access LLC 502-822-6032
- Gould’s Discount Medical 502-492-2000 gouldsdiscountmedical.com
- Senior Citizens Network, 502-451-4758

Undoubtedly you will need and want to travel outside of your home for medical appointments, employment, recreation, etc. Please see below for information about parking permits, driver’s evaluations and training, vehicle modification and transportation services.
Transportation

Disabled Parking
Applications for disabled parking permits and plates are available at the County Clerk’s Office in Kentucky or the License Bureau in Indiana. Available permits:

Plates and Placards

Kentucky:
• The application will need to be signed by your physician and submitted to your local county clerk’s office
• Your signature must be notarized
• There is no charge for a temporary placard; it is good for 3 months
• There is no charge for a permanent placard; it is good for 6 years
• There is no charge for disabled license plates however standard tax and registration fees apply
• Notary is available for $2.00 in the County Clerk’s office
• Jefferson County Clerk’s office 502-574-5700

Indiana:
• The application will need to be signed by your physician and submitted to your local license branch
• There is a $5.00 fee for a temporary placard; it is good for up to 1 year
• There is no charge for a permanent placard; it is good until your health care provider certifies you are no longer disabled
• There is no charge for disabled license plates however standard tax and registration fees apply
• Floyd County License Branch office 888-692-6841

Disabled Parking Spaces
Metro Louisville residents can apply to have an Accessible Parking Zone (disabled parking space) installed to allow for accessible on-street parking near their home. Call the Public Works Department at 502-574-3893 for more information or to apply. Fees apply.

Driver Evaluations, Training and Vehicle Modifications
Before you begin driving again, your physician or occupational therapist may recommend a driver’s evaluation to determine if you are safe to return to driving. Driver’s evaluations will test:
• Coordination
• Range of motion
• Reaction times
• Problem solving or decision making
• Vision and hearing
• Need for vehicle modifications
The following locations provide driver’s evaluation services:

Driver Assessments and Training  
Frazier Rehab Institute – Newburg  
3430 Newburg Road, Suite 111  
Louisville, KY 40218  
502-451-6886  
UofLHealth.org

Office of Vocational Rehabilitation  
Driver Evaluation/Vehicle Modification Branch  
301 East Main Street  
Lexington, KY 40507  
859-246-2117  
ovr.ky.gov

Wheelchair Accessible Vehicles

Superior Van and Mobility  
4734 Rockford Plaza Dr.  
Louisville, KY 40216  
502-447-8267  
800-458-8267  
superiorvan.com

Cook and Reeves  
Van Sales and Rentals  
4443 Dixie Highway  
Louisville, KY 40216  
502-447-8255  
cookandreevesvans.com

Public Transportation

Transit Authority of the River City (TARC)  
502-585-1234  
ridetarc.org

• All TARC routes are wheelchair accessible. The front of each TARC bus has seating for seniors and riders with disabilities. All TARC routes feature buses with lift mechanisms or ramps to assist riders in wheelchairs.
• Kneeling buses are available to make boarding easier for riders with mobility impairments. Kneeling buses are identified with a decal near the front door.
• An online trip planner is available on the website or you can call 502-585-1234 to speak with a TARC representative for assistance.
• Fare: $1.75 cash or $1.50 with MyTARC smart card.
• With a TARC ID, students, seniors, disabled persons can ride for $ .80
TARC 3 via TARC’s Para Transit Department
1000 West Broadway
Louisville, KY 40203
502-213-3217
ridetarc.org

- Must be unable to use the fixed-route system due to disability or functional limitations
- Must submit application and be approved by TARC
- Cost: $3.00 each way
- Service area is up to 3/4 of a mile from fixed bus route lines excluding the express routes

Wheels – American Red Cross
502-561-3690
- For disabled persons and senior citizens age 60 or over
- For medical appointments, nutrition services, and essential senior services
- Seniors call KIPDA 502-266-5571 to apply
- Disabled persons call Wheels 502-561-3690 to apply

Catholic Charities Senior Services
502-873-2566
- Primarily for citizens 60 years and older
- Louisville area
- Volunteers drive their own cars and stay for the appointment
- Riders must be ambulatory - cane or walker OK if independent with use
- Will transport maximum of 1 x week
- Requires 7 day notice
- Fee is $10 round trip

Yellow Cab
502-214-7505
goloucab.com
- 200 cabs can take folding wheelchairs
- 8 vans can transport power chairs
- Accept cash or credit; no checks
- Rates $4.70 first mile then $2.25 for each additional mile.
- The rates are the same for a cab or a wheelchair van.
- Serves Metro Louisville and parts of Southern Indiana

Medicaid – Medical Transport
Kentucky Medicaid offers non-emergency transportation assistance for members needing transportation to physician offices, medical testing or therapy appointments. This service is available to KY Medicaid members even if they are enrolled in a managed care plan.
- Federated Transportation of the Bluegrass (FTSB) is the company used by KY
- Medicaid in Jefferson, Oldham, Bullitt, Henry, Shelby, and Spencer counties
- To be eligible, there cannot be a vehicle registered to anyone in your home unless the vehicle is used for employment purposes or is not running. Proof will be required.
- If you live on a TARC route and are able to ride, TARC passes may be provided
- Call FTSB at 888-848-0989 to schedule. 72 hour notice is required
- No charge for transportation
Indiana Medicaid offers non-emergency transportation assistance for members needing transportation to physician offices, medical testing or therapy appointments.

- Online scheduling is available at indianamedicaid.com Click on Members. On the right side, click on Search for Provider. On the provider search page, choose “other” and use the pull down menu to select a transportation provider. Chose the provider and complete the form.
- You can also schedule a trip by calling 800- 457-4585 or a provider directly
- Allows 20 one way trips of less than 50 miles per year
- Additional trips over 20 require prior authorization
- There is a $.50 to $2.00 fee for some members depending on benefit plan
- Schedule in advance as transport companies fill up quickly

**Private Pay Transportation Services**

Medical transportation companies typically provide door to door transport services for ambulatory and non-ambulatory citizens. There are multiple companies in the Louisville area who provide transportation services. The following private companies have provided marketing material to Frazier Rehab Institute for medical transport services. The companies noted below are not endorsed by Frazier Rehab Institute and are listed for informational purposes only:

- Able Care 502-267-1911
- Care Conexion 502-466-7000
- Louisville Wheelchair Transportation 502-419-0884
- Lyft Accessible Dispatch Download App
- Magic Transportation 502-935-1871
- Nolan’s Medical Transport 502-295-3423
- uberWAV Download App
- Valley Medical 502-634-2552

*Tip - Private pay hired help and companion companies provide transportation services as part of a package of services. Ask your case manager for a list of private pay hired help companies or go to page 22 of this guide to call to compare rate information.*

**Ironman Housing and Transportation Fund**

Frazier Rehab Institute
Emily Coons, Spinal Cord Medicine Program Coordinator
220 Abraham Flexner Way,
Louisville, KY 40202
502-407-3296

If you are unable to use TARC, TARC 3 or Medicaid transportation services and are unable to afford paying privately for transportation, you may be eligible for assistance through the Ironman Housing and Transportation Fund. Eligible patients may receive assistance with transportation costs during the time they are actively engaged in therapy at Frazier. Degree of assistance will be determined based on need and availability of funds (supply and demand).
Travel

Access-Able Travel Source .......................... www.access-able.com
Provides free travel information for the disabled

Internet Access
232-2979
Louisville Free Public Library .......................... 502 574-
1611 Main Branch
301 York St.
Louisville, KY 40203

If you do not have access to a computer with internet capacity, visit your local public library. The internet has massive amounts of informational materials available regarding traumatic brain injury from all over the world.

Assistive Technology

Assistive Technology Resource Center
Frazier Rehab Institute
220 Abraham Flexner
Louisville, KY 40202
(502) 582-7660 or (866) 540-7719
www.kentuckyonehealth.com/assistive-technology

The Assistive Technology Resource Center uses technology to maximize function for individuals being treated for disabling conditions such as spinal cord injury, movement disorders, brain injury, stroke and developmental disabilities. The services offered by ATRC include:

- Seating and mobility
- Adaptive computer access
- Electronic aids to daily living
- Home and work modification

Kentucky Assistive Technology Services Network (KATS)
Coordinating Center
200 Juneau Drive
Louisville, KY 40243
(502) 489-8258
(800) 327-5287
www.katsnet.org

KATS Network seeks to “connect individuals with disabilities to the appropriate organizations that can improve the quality and productivity of their lives through assistive technology.” The KATS Network provides the following services and more:

- Assistive technology services
- Loan of assistive devices
- Funding information and referrals
- Assessments and evaluations
- Consultations on appropriate technologies
The Kentucky Assistive Technology Loan Corporation (KATLC) offers low interest loans for qualified applicants with disabilities who need assistive technology.

Enabling Technologies (enTECH)
845 South Third Street
Louisville, KY 40203
(502) 585-9911
www.spalding.edu/academics/entech/

EnTECH provides consultation, assessment, material development, training, resources, and a lending library among other services.
RETURN TO SCHOOL AND/OR WORK

Education and School Reentry

Frazier Rehab’s Academic Reintegration coordinator will work with the family, school, and rehab team of each brain injured child to identify, design and implement services to meet the needs of the child for a successful school reentry.

Legislation, such as the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, provides all children with the right to a free and appropriate education. The law says that children with disabilities must be provided the same opportunity to learn as children without disabilities.

Indiana Department of Education
Room 229 State House
Indianapolis, IN 46204
(317) 232-0588

Kentucky Department of Education
500 Mero Street
Frankfort, KY 40601
(502) 564-3141

Indiana and Kentucky Departments of Education provide assistance with:

- Exceptional children services
- Individual Education Plan (IEP) and 504 plans
- Home/hospital tutoring programs
- Early childhood education programs for 3 and 4 year olds.

If you have questions regarding school related services, you can contact Frazier Rehab’s Pediatric Academic Coordinator at 502-582-2548 for assistance.

Early Intervention Services

First Steps serves children age birth to three who have developmental delays. Services include the following:

- Evaluation and development of an individual family service plan
- Nursing and nutrition assessments
- Physical Occupational and Communication development
- Assistive technology
- Skill development services
- Vision and hearing services
- Transition services to early childhood education programs

Southern Indiana Cluster I
P.O. Box 547
Corydon, IN 47112
(812) 738-1975
http://www.in.gov/fssa/ddrs/2815.htm

Kentuckiana District - Seven Counties
3717 Taylorsville Road
Louisville, KY 40220
(502) 459-0225
http://chfs.ky.gov/dph/firststeps.htm
Health Care Assistance for Children
The following agencies may assist in funding for services, testing or equipment not covered by health insurance. Families will need to meet specified income criteria.

KY Commission for Children with 800 232-1160 Special Health Care Needs
1405 E. Burnett
Louisville, KY 40217
www.chfs.ky.gov

IN Children’s Special Health Care Services 800 475-1355 (CSHCS)
TTY 866 275-1274
Espanola 800 433-0746
http://www.iiddc.indiana.edu/irca/ServArticles/CSHCSprogram.html

Vocational Rehabilitation Services
Vocational Rehabilitation assists people with disabilities in making informed career choices and utilizing available support services to prepare for, obtain or retain employment. Vocational Rehabilitation services include:

- Counseling and guidance
- Physical and mental restorative services
- Vocational training
- Placement and job coaching
- Transportation (driver’s evaluations and vehicle modification)
- Telecommunications
- Other rehabilitation technological aids and devices

After a referral is made to your area Vocational Rehabilitation office, a counselor will contact you to schedule an appointment and begin the application process. If you are determined eligible, the counselor will work with you to determine which programs are appropriate to help you meet your vocational goals.

For more information regarding Vocation Rehabilitation services, contact your local Vocational Rehab office.

Louisville Regional Office of Vocational Rehabilitation 410
West Chestnut, Suite 100
Louisville, KY 40202
(502) 595-4173

Kentucky Office of Vocational Rehabilitation 800
372-7172
www.ovr.ky.gov

Indiana Division of Disability and Rehabilitation Services
(800) 545-7763 choose option 2 for Vocational Rehab
www.in.gov/fssa/ddrs/2636.htm
Indiana Area 25 Vocational Rehab Office  
Serves Clark, Floyd, Harrison and Scott counties  
452 Vaxter Avenue  
(812) 288-8261

**Return to Work for Agricultural Occupations**  
Kentucky AgrAbility 800 333-2814  
2814 N 106F AgScience North  
University of Kentucky Lexington,  
KY 40546-0091  
http://ces.ca.uky.edu/agrability/

Provides education and technical assistance to agricultural operators and farm families.

**Equal Opportunity Agencies**  
The Rehabilitation Act of 1973 and the Americans with Disability Acts of 1990 and 1995 prohibit discrimination on the basis of disability. The ADA addresses equal opportunity for:

- Title I Employment  
- Title II Public Services  
- Title III Public Accommodations  
- Title IV Telecommunications  
- Title V Miscellaneous

To learn more about the ADA contact:  
Southeast Disability and Business 800 949-4232  
Voice/TTY Technical Assistance Center  
1419 Mayson St.  
Atlanta, GA 30324  
www.ADAseast.org

Architectural and Transportation Barriers 800 872-2253  
Voice/TTY Compliance Board  
1331 F. Street, NW, Suite 1000  
Washington, DC 20004-111

**Brain Injury Associations**  
Brain Injury Associations are available to assist survivors and families and may provide the following:

- Legislative and public advocacy  
- Prevention and understanding of brain injury  
- Information and resources  
- Networking and support groups  
- Educational seminars  
- Provider Directories  
- Conferences

Brain Injury Alliance of Kentucky 502 493-0609  
7321 New LaGrange Road, Suite 100 866 854-4246  
Louisville, KY 40222  
Fax: 502 426-2993
Brain Injury Association of Indiana
Valparaso Ct., Suite A
Indianapolis, IN 46268
www.biausa.org/Indiana/bia.htm

Brain Injury Association of America
8201 Greensboro Drive
McLean, VA 22102

Brain Injury Information Center
www.biausa.org

International Brain Injury Association
MCC Association Management
5909 Ashby Manor Place
Alexandria, VA 22310
www.internationalbrain.org

Resources for Brain Injury Information

Brain Resources and Information Network
National Institute of Neurological Disorders and Stroke
NIH Neurological Institute
P.O. Box 5801 Bethesda,
MD 20824
www.ninds.nih.gov

Brain Injury Society
1901 Avenue North, Suite 5E
Brooklyn, NY 11230
www.BISociety.org

Brain Trauma Foundation
7 World Trade Center
34th Floor
250 Greenwich St. New
York, NY 10007
www.braintrauma.org

National Resource Center for
3704 Traumatic Brain Injury
Virginia Commonwealth University
P.O. 980542
Richmond, VA 23298

National Rehabilitation Information Center
301 5984 1010 Wayne Avenue, Suite
Silver Spring, MD 20910-3319
www.naric.com
**For additional resources, please refer to the Frazier Rehab Institute Community Resource Guide for adults and pediatric patients online and in your education binder.**
Glossary

**ABNORMAL MUSCLE TONE** - A disturbance in the amount of tension normally found in a muscle. The tension may be “too tight” (hypertonicity or spasticity) or “too loose” (hypotonicity or flaccidity).

**ABSTRACT THOUGHTS** - Ideas or concepts that are not explicitly stated or provided; “thinking outside the box”.

**ACTIVE RANGE OF MOTION (AROM)** - The amount of movement in a joint that a person can achieve by using their own muscle strength.

**ACTIVITIES OF DAILY LIVING (ADL)** - Activities, include feeding, dressing, personal care, homemaking and community reintegration.

**ADAPTIVE EQUIPMENT** - Any device used for the purpose of improving one’s ability to perform a task (in other words, button hooks and reachers, built-up utensils, walkers, large computer screens).

**AFFECT** - Following brain injury many people have a "flat" or "blunted" affect. This means that their faces don't show what they are feeling.

**AFO** - Ankle-foot orthosis; any brace, which controls the ankle and foot.

**AGITATION** - Being uncontrollably restless, upset or overly excited by things going on inside of or around a person.

**AIR SPLINTS** - Plastic splints that are formed to fit around the disabled limb and inflated to full capacity to exert a pressure on the tissues, which facilitates the flow of circulation and reduces spasticity.

**ALERTNESS** - Refers to consciousness or wakefulness.

**AMNESIA** - Lack of memory for periods of time.

**ANOMIA** - Inability to find the correct word. Problems with naming objects, person or events; often the person will recognize the word when it is given.

**ANOXIA** - A condition resulting in insufficient oxygen to the brain.

**ANTI-CONVULSIVE MEDICATIONS** - Medications that prevent or relieve convulsion/seizures. Such medications include: Dilantin, Tegretol, Depakote and others.

**ANXIETY** - Motor tension caused by physical and psychological tension (i.e. worry, fear, upset stomach, heart pounding, lack of concentration, difficulty sleeping, etc.)

**APATHY** - A person exhibiting apathy may refuse to participate in or be disinterested in activities and spend time sitting or lying around. Disinterest or lowered activity is the result of impaired brain function not under the voluntary control of the person with brain injury.

**APHASIA** - Speech and language problems caused by damage to the brain. People with aphasia may have problems in speaking, understanding, reading and writing.
**APRAXIA** - Partial or complete inability to carry out a planned, purposeful, learned sequence of movements, in the absence of paralysis. Sensory changes or deficiencies in understanding.

**AROUSAL** - One part of the attention stage of information processing. It is the ability to stay awake. An early problem for survivors is that they can be constantly drowsy, sleepy or not very alert. This often improves with time.

**ASPIRATION** - The passage of foreign material, such as food and liquid, into the lungs.

**ASSISTANCE LEVELS**
- **Dependent** - survivor who makes no voluntary effort to assist.
- **Maximal Assistance** - survivor who participates minimally and another person (or persons) does most of the work.
- **Moderate Assistance** - survivor and another person (or persons) participate about equally in performance of the activity.
- **Minimal Assistance** - survivor performs most of the activity and another person (or persons) assists minimally but constantly.
- **Supervision** - survivor requires observation by another person to ensure consistently safe performance of an activity.
- **Independent** - survivor requires no assistance or supervision to perform an activity.

**ATAXIA** - Interruption of smooth muscular movements characterized by incoordination usually associated with damage to the cerebellum.

**ATTENDING PHYSICIAN** - The doctor ultimately responsible for the care of the person with brain injury.

**ATTENTION SPAN** - The length of time a person can concentrate on a task or event.

**AUDIOLOGY** - Study of hearing and balance disorders.

**AUDITORY COMPREHENSION** – The ability to understand what is heard.

**AUGMENTATIVE COMMUNICATION DEVICES AND SYSTEMS** - An alternative or supplemental communication device for non-verbal persons (i.e. alphabet board, picture board etc.).

**AWARENESS** - understanding the problems you are having because of a brain injury.

**BEHAVIOR MODIFICATION PROGRAM** - A program for intensive behavioral intervention in a controlled setting. The purpose is to develop adaptive behavior in a less structured environment. Persons with brain injury often need to relearn accepted behaviors in this manner. The Neuropsychologist is instrumental in developing these programs.

**BODY SCHEME** - The knowledge of how one’s body is put together and the relationships of body parts to one another (i.e. a person may not know that their hand is at the end of their arm).

**BOWEL AND BLADDER PROGRAM** - Brain injury often causes impairment in bowel or bladder function. Activity, medication and diet are used to reestablish a routine for bowel and bladder regulation.

**BRAIN STEM** - This portion of the hindbrain is the main “highway” for information flowing between the brain and the rest of the body. All signals from and to the brain must pass through the brain stem. The brain stem controls consciousness, swallowing, heartbeat, body temperature, breathing, eye movements, etc.
CARRYOVER - Refers to the ability to retain newly learned skills or information and apply them from situation to situation.

CATHETER - Catheters are thin tubes, which may be placed in several parts of the body to put material in, drain body fluid out, or to take samples or measurements.

CEREBELLUM - That part of the brain, which coordinates movements; located in rear of the skull.

CEREBROSPINAL FLUID, (CSF) - The cerebrospinal fluid surrounds the brain and spinal cord and fills the ventricles (cavities) in the brain.

CEREBRUM - This is the largest portion of the forebrain and is the center for rational thought and creativity. Its capabilities give humans the capabilities that no other creature will ever possess.

CHEMICALLY DEPENDENT - Drug or alcohol dependent.

CHEST TUBES - Tubes inserted between the ribs and lungs to remove air and/or fluid.

CLONUS - Quick stretch of a muscle producing a sustained series of rhythmic jerks.

CLOSED HEAD INJURY - A brain injury that does not include a fractured skull.

COGNITION - How our brain processes information. The process of thinking.

COMA - People with severe brain injuries often slip into long periods of unconsciousness. The depth of coma can vary from no response to stimulation, while for others a slight awakening may be observed.

COMMUNITY REINTEGRATION/VOCATIONAL PROGRAMS - Community re-entry/vocational programs offer intensive retraining in the life skills brain injured persons need in order to function as independently as possible. Training includes emphasis on self-care, activities of daily living and physical mobility designed to teach patients and their families about community resources and how to use them (i.e. transportation services, recreation programs and support groups).

COMPENSATION - Learning to use other than normal means to achieve a goal.

COMPUTERIZED TOMOGRAPHY, CAT SCAN, CT SCAN - A series of x-rays of the brain at various levels to show its structure; a CT SCAN shows the more obvious changes (e.g. bleeding, enlarged ventricles or atrophy/shrinkage).

CONCENTRATION - The capacity to deliberately maintain one’s attention on specific stimuli excluding others from awareness.

CONCEPT - General idea or meaning usually mediated by a word, symbol or sign. An idea that combines several elements from different sources into a single notion.

CONCRETE THOUGHTS - Ideas or concepts that are easily identified or given.

CONCUSSION - This is an injury to the head often mild, causing momentary or no loss of consciousness, sometimes referred to as a mild TBI.
CONFABULATION - Making something up that is not true.

CONFUSION - The state of being “mixed-up” relating to time, place or person.

CONTINENT - Ability to control bowel and bladder functions.

CONTRA-COUP INJURY - Injury to the brain opposite the side of the head, which was hit.

CONTRACTURE - Loss of range of motion in a joint due to insufficient movement.

CONTUSION - Medical term for a bruise.

CORTEX - The cortex is the largest portion of the brain and is where most thinking and cognitive functioning takes place.

CRANIOTOMY - Any surgical opening into the skull performed to relieve intra-cranial pressure, to control bleeding or to remove a tumor.

DEFICIT AWARENESS - The ability to recognize how an injury has affected one’s ability to perform certain tasks (being unaware of one’s deficits is not the same as being in denial).

DIAPHORESIS - Excessive sweating.

DIFFUSE AXONAL INJURY (WHITE MATTER SHEARING) - Microscopic tears of the nerve fibers that may have a more significant impact on functional abilities than the more obvious damage to the brain.

DIPLOPIA - Seeing two images of a single object. Also referred to as double vision.

DISINHIBITION - The inability to control or inhibit impulses and emotions. The person may say or do things impulsively.

DISTRACTIBILITY - The inability to hold your attention on an activity.

DYSARTHRIA - Difficulty with talking due to weakness or poor coordination of the muscles of the lips, tongue or jaw. Speech may sound “slurred”.

DYSPHAGIA - Inability or difficulty in swallowing.

ECHOLALIA - A parrot-like repetition of words spoken by others.

EDEMA - Swelling.

ELECTROENCEPHALOGRAPHY (EEG) - An electrical test of the functioning of the brain.
ENCEPHALOGRAPHY - Non-invasive use of ultrasound to record echoes from brain tissue. Used to detect hematoma, tumor or ventricle problems.

ENCEPHALOPATHY - Any abnormal condition of the structure or function of tissues of the brain.

ENDOTRACHEAL TUBE (ET TUBE) - A tube inserted into the patient’s trachea (windpipe) to control their breathing and prevent foreign material from entering the lungs.

ENDURANCE - The ability to maintain an activity for a length of time. This applies both to physical and cognitive activities. Reduced endurance is very common for survivors of brain injury.

EUPHORIA - An exaggerated feeling of well-being or elation.

EXECUTIVE FUNCTION - The cognitive skills that help people do goal-directed activities such as making a meal, driving, or managing money.

EXTERNAL FIXATION DEVICE - A special splint that holds broken bones in place, these devices are connected to pins through the bones.

EYE-HAND COORDINATION OR VISUAL-MOTOR INTEGRATION - Is the use of the eyes and hands together in which visual information guides the motor response of the hand.

FAMILY TEACHING - Formal or informal scheduled meetings with families to assist them in understanding the patient’s problem areas and suggestions for recovery.

FAMILY CONFERENCE - A meeting between the family and members of the rehab team to discuss progress, concerns or discharge plans.

FINE MOTOR ACTIVITIES - Activities involving small complex movements such as writing and manipulating small objects.

FLACCIDITY - Lack of muscle tone, which results in the inability to perform any movement.

FRONTAL LOBE - The area of the brain located in the front left and right sides. This area plays a role in controlling emotions, motivations, social skills, expressive language, working memory and new learning.

FROZEN SHOULDER - Pain and stiffness of the shoulder resulting in limited range of motion.

FRUSTRATION TOLERANCE - The ability to deal with frustrating events in daily life.

GASTROSTOMY TUBE (G-TUBE) - Surgical insertion of a feeding tube into the stomach through the abdominal wall.

GLASGOW COMA SCALE - Defines the level of consciousness with three factors: motor responses, eye opening and verbal responses. Range is from 3 - 8 (severe), 9 - 12 (moderate) and 13 - 15 (mild).

GROSS MOTOR ACTIVITIES - Large movements of the body involved in rolling, sitting and standing.

GROUP HOME - A closely supervised living situation for disabled individuals that focuses upon the development of self-help skills to prepare individuals for semi-independent or independent living.
HALO - A metal ring fixed to the skull of patients with spinal injuries to prevent head and neck movement.

HEAD CONTROL - The ability to maintain the head in an upright position and move it independently of the body, arms and legs.

HEMATOMA, SUBARACHNOID, SUBDURAL, EPIDURAL - Trauma to the head, which causes blood vessels to rupture. Blood accumulates and may put pressure on the brain.

HEMIANOPSIA - Blindness of one-half of the visual field caused by brain injury.

HEMIPARESIS - Muscle weakness of one side of the body.

HEMIPLEGIA - Paralysis of one side of the body caused by an injury to the opposite side of the brain.

HEMORRHAGE - The escape of blood from a ruptured vessel.

HIGHER COGNITIVE FUNCTIONS - Usually refers to judgment, abstraction, organization, problem-solving or planning.

HOYER LIFT - A mechanical device used to transfer a person safely to and from bed or wheelchair.

HYDROCEPHALUS - Excess accumulation of cerebrospinal fluid, causing increased intracranial pressure.

HYDROTHERAPY - Treatments using water as a means of promoting relaxation and healing, increasing flexibility and decreasing pain. May involve use of pools, walking tanks, or whirlpools.

HYPOTHALAMUS - Part of the forebrain, this tiny brain section handles basic needs such as hunger and thirst. It also plays a role in several emotional states.

HYPOXIA - A decrease in oxygen supply to tissue.

IMPULSE CONTROL - The ability to stifle inappropriate behavior.

IMPULSIVITY - Attempting with confidence unfamiliar tasks or responses that are beyond one’s capabilities or knowledge. Acting without first thinking.

INCONTINENT - Inability to control bowel and bladder functions.

INFARCT - A tissue area deprived of blood flow.

INHIBITION - The ability to filter thoughts and expressions.

INITIATION - The ability to start an activity or conversation with little or no prompting.

INSIGHT - Understanding and integrating factors of a situation.

INTENTION TREMOR - A tremor that occurs only with voluntary, planned (intentional) movements.

INTERMEDIATE CARE FACILITY - A facility, which provides personal care with an intermediate degree of physical and/or social dependence.
JARGON – Nonsensical words or sounds used in place of real words.

JUDGEMENT - The ability to know the dangers of certain activities and to make appropriate decisions.

LABILITY - Inappropriate emotional expression and control such as exaggerated laughing or crying.

LACK OF INITIATION AND FOLLOW-THROUGH - The inability to start, continue and carry through actions without structured supervision.

LIMBIC SYSTEM - A set of structures (usually considered part of the temporal lobe) that plays an important role in memory, attention, emotions and behavior.

LONG TERM MEMORY - The ability to remember things over a long period of time. This type of memory is usually preserved after a brain injury.

MAGNETIC RESONANCE IMAGING (MRI) - The process of creating images of the body without the use of ionizing radiation. During MRI, a magnet is used to pull on the nuclei of the body’s hydrogen atoms. This magnet causes the nuclei to line up and repeatedly absorb and raise radio waves. A computer then translates these radio waves to images of the areas examined. The images are projected on a video screen and recorded on film for interpretation by a radiologist (a physician specializing in diagnostic imaging). MRI scans are capable of better resolution than CT scans and can image deeper in the brain.

MEMORY - Recording new information. Many types of memory are recognized, e.g., the process of perceiving information, organizing and storing it, and retrieving it at a later time as needed. Memory is a complex function that involves many parts of the brain working together. There are different “types” of memory, including immediate (repeating a phone number), recent (recalling what occurred the previous day) and remote (recalling the name of a childhood friend).

MINIMALLY CONSCIOUS STATE - The term minimally conscious state describes a person who shows intermittent but clear evidence of awareness of themselves or their environment. This classification is given if they can respond to command; for example, moving a finger reliably when asked to do so.

MOTOR CONTROL - The ability to selectively contract or relax a muscle or group of muscles at will for a purposeful movement.

MOTOR PLANNING PROBLEM - Difficulty starting, continuing and stopping movements when there is no actual muscle weakness or damage. Also referred to as APRAXIA.

MUSCLE TONE - The amount of tension (continuous contraction) in a muscle at rest. The quality or quantity of muscle tone has an effect on the efficiency of voluntary muscle contraction.

NASOGASTRIC TUBE (NG TUBE) - A tube which passes through the patient’s nose and throat and ends in the stomach. This tube allows for feeding to maintain nutritional status or to remove stomach acids.

NEGLECT, HEMI-NEGLECT - Severe lack of awareness of the side of the body or environment opposite the side of the brain injury. May occur in any sensory modality.

NEURON - The basic operating unit of the brain. Billions of them interconnect inside the brain to send thoughts, feelings and information throughout the brain and the body.

NEUROPSYCHOLOGICAL EVALUATION - An evaluation using psychological tests, interview and behavioral observations to determine a person’s cognitive abilities, emotional and behavioral state. These evaluations focus on relationships between the brain and behavior.

NEUROPSYCHOLOGIST - A psychologist with special training and skills in dealing with people with
neurological impairments and brain-behavior relationships. Neuropsychologists often administer special evaluations of brain function and coordinate the rehabilitation of persons with brain injury.

NEUROSURGEON - A surgeon who performs surgery on the brain and nervous system.

NURSE - A staff nurse who coordinates the patient’s care. Typically interacts closely with the patient and family in providing direct nursing care and education.

NUTRITIONIST - An expert in the feeding and nutritional needs of people.

NPO - A physician’s order that the patient is to receive “nothing per oral,” i.e., “nothing by mouth.”

NYSTAGMUS - Involuntary movement of the eyeball.

OCCIPITAL LOBE - The back part of the brain involved in perceiving and understanding visual information.

OCCUPATIONAL THERAPIST (OT) - The occupational therapist works on routines of self-care activities and retraining to improve a person’s independence.

ORGANIZATION - The ability to arrange your thoughts to make them sensible and orderly.

ORIENTATION – The ability to know one’s location in time, space, and relationship to other people.

OUTPATIENT REHABILITATION - This program is for patients who no longer need a hospital environment and may benefit from living in the community with retraining received at rehabilitation centers.

PARALYSIS - Inability to move a muscle or group of muscles voluntarily.

PARESIS - Partial or incomplete paralysis.

PARIETAL LOBE - The upper middle lobe of the brain involved in perceiving and understanding sensation and relates to speech and writing.

PASSIVE RANGE OF MOTION (PROM) - The amount of motion at a given joint when it is moved by another person or another functioning limb. See Active Range of Motion.

PERCEPTION - How the various senses receive information and make sense of them.

PERSEVERATION - Meaningless repetition of a verbal or motor response or repetition of answers that are not related to successive questions asked.

POSITRON EMITTED TOMOGRAPHY (PET SCAN) - Imaging procedure that allows the brain’s metabolism to be pictured so that areas of greater and lesser brain activity can be discerned.

PHYSIATRIST - A physician who specializes in physical medicine and rehabilitation, who has overall responsibility for directing the rehabilitation program.

PHYSICAL THERAPIST (PT) - Treats a patient with a program formulated from an evaluation of the individual’s motor functioning to correct and improve areas of impairment.
PLATEAU - A continued absence of significant improvement.

POSITIONING - Placing a person in a position and changing that position so that muscle and joint flexibility is preserved and skin breakdown prevented.

POST TRAUMATIC AMNESIA (PTA) - That period of time following an accident when there is no memory. This period includes the coma and any time after awakening when nothing can be remembered. The length of the PTA is a partial predictor of the quality of the recovery. PTA ends at Rancho Level 6.

PRAGMATICS - The behaviors behind what you say or communicate, such as eye contact, gestures and facial expressions.

PREMORBID – Patient’s condition before the injury.

PROBLEM SOLVING - The ability to use cognitive processes in a task in a practical way using reasoning and judgment.

PRONE - Lying face down.

PROSTHESIS - An artificial limb, any artificial device, which replaces the function of a body part or system, i.e., an artificial limb.

PSYCHIATRIST - A physician who specializes in the medical management of mental illness.

PSYCHOLOGIST - A mental health professional with expertise in the diagnosis and treatment of mental, emotional and behavior disorders.

PTA - See AMNESIA, POST-TRAUMATIC

PULMONOLOGIST - A physician who specializes in problems of the lungs.

QUADRIPARESIS - A weakness that involves all four limbs.

RANCHO LOS AMIGOS COGNITIVE RECOVERY SCALE - A ten level scale of cognitive recovery ranging from I (No Response) to X (goal directed, appropriate interactions with the environment.) A five level scale of cognitive recovery is used for children approximately five years old and younger.

RANGE OF MOTION - Refers to the specific angles of movement of which a joint is capable.

REASONING - Drawing logical conclusions with analysis and support of given facts. Includes drawing inferences, recognizing cause/effect, and understanding relevancies and relationships. Critical thinking skills in problem solving include: (1) Ability to define a problem, (2) Selecting pertinent information in solving it, (3) Recognizing stated and unstated assumptions, (4) Formulating and selecting relevant hypotheses, and (5) Drawing valid conclusion and judging validity of inferences.

REHABILITATION - The restoration of maximum independence to a disabled individual with his limitations by developing his residual capabilities.

RESIDENT - A physician who has finished his medical training and is taking additional training to specialize while being supervised by the Attending Physician.
RESPIRATOR - See VENTILATOR.

RESPONSE - How you act, what you say or do. Your reactions to what is happening around you.

RIGIDITY - Difficulty in conforming or changing attitudes or actions; tenseness or immobility of muscles due to extreme increase in muscle tone.

SEIZURE/SEIZURE DISORDER - A seizure is a disturbance in the electrical chemical activity of the brain due to nerve cell damage or electrolyte imbalance.

SELF-AWARENESS – One of the more common problems among survivors is the ability to really be aware of what they are saying and doing and their impact on others. People with self-awareness problems may not be aware of some of their major impairment.

SEMICONSCIOUS - Not completely aware or responsive.

SENSORY INTEGRATION - Interaction of two or more sensory processes in a manner, which enhances the adaptiveness of the brain’s response.

SENSORY STIMULATION - A treatment that stimulates all the senses designed to encourage the coma or vegetative patient to respond to their environment.

SEQUENCING SKILLS - The ability to put time or events in the correct order, e.g., motor (sequencing motor movements smoothly) or linguistic (sequencing words appropriately into sentences) as well as keeping track of the correct order of stimuli.

SERIAL CASTING, INHIBITIVE - A technique used to reduce contracture and control hypertonicity in and around a joint, usually the ankles, wrists and elbows. A series of casts are applied to the area every few days. When the casts are changed, the joint should be recast in an improved position.

SHUNT - A procedure to drain off excessive fluid in the brain.

SOCIAL SECURITY DISABILITY - Monthly income granted to persons who have paid into the social security system and are confirmed disabled and unable to work for at least one year. Coverage also provides health insurance through the Medicare program if the disability continues beyond two years.

SPASM – A sudden involuntary contraction in muscles or blood vessels, which disrupt function.

SPEECH-LANGUAGE PATHOLOGIST – Speech-language pathologists address communication skills which involve listening, speaking, reading, writing and cognitive thinking) skills. Speech-language pathologists also diagnose and treat swallowing problems.

SPLINT - An external device used to provide positioning to help prevent or correct contracture of an extremity.

SUB-ACUTE REHABILITATION PROGRAM - This program is designed for patients slow to recover and for which more time is needed to decide the best treatment.
**SUBLUXATION** - A partial or incomplete dislocation of a joint.

**SUPINE** - Lying on one's back.

**SUPPLEMENTAL SECURITY INCOME** - Refers to a federal income maintenance program for the aged, blind and disabled who have limited income and resources. Administered through the Social Security Administration. People who receive supplemental security income usually receive Medical Assistance also.

**SWELLING** - Just as an ankle swells if it gets turned wrong, the brain can swell following an injury. Because the brain is encased within the skull, swelling can put enormous pressure on the brain.

**SYNERGY, MOVEMENT** - Action of two or more muscles that forms a pattern of movement. In brain injury, synergy refers to abnormal stereotypical patterns of movement.

**TEAM ROUNDS** - A weekly meeting of an individual’s Rehabilitation Team. At the team conference, the person’s progress, rehabilitation goals and estimated length of stay are discussed and documented.

**TEMPORAL LOBE** - The lower middle part of each side of the brain involved in receiving information from the auditory system memory, the sense of time and emotions.

**TILT TABLE** - A table, which has the capacity to raise and lower a person from the horizontal to the vertical position and vice versa.

**TONE** - The tension for resting muscles and the amount of resistance that is felt when a muscle is moved.

**TRACHEOSTOMY** - A hole made in a patient’s neck, which will allow them to breathe with a ventilator. A surgical procedure, which creates an opening into the windpipe (trachea) through the neck.

**TRACKING** - The ability to follow moving objects with the eyes.

**TRANSFERS** - The ability to move from one surface to another. Basic transfers include movement to and from a bed and chair; advanced transfers refer to movement to and from a toilet, car, tub/shower, and floor.

**TRUNK CONTROL** - The ability of a person to maintain proper alignment of the trunk and pelvis; to move and bring the trunk back into alignment after movement.

**VEGETATIVE STATE** - the term vegetative state is used to describe someone who is awake but unaware of themselves or their environment. A person in a vegetative state will open their eyes, demonstrate sleep-wake cycles and basic reflexes, such as blinking when they are startled by a loud noise or withdrawing a hand when a painful stimulus is applied. However, they do not demonstrate any purposeful response to sensory or cognitive stimuli, such as following an object with their eyes or responding to command.

**VENTILATOR** - A mechanical device designed to qualify (humidify, warm and adjust oxygenation) the air, which is then delivered to the patient by assisting or controlling pulmonary ventilation, either intermittently or continuously.

**VERBOSITY** - Inability to control the amount of verbalization. Verbalization is often disorganized.

**VESTIBULAR SYSTEM** - This system is responsible for maintaining balance and equilibrium. The system receives information from the inner ear, the eyes and sensory receptors in the joints of the body; dysfunction in this system will result in unsteadiness, imbalance or spatial disorientation.

**VIDEO FLUOROSCOPIC SWALLOW STUDY** - A video x-ray study that is performed to determine any difficulties a person may have in swallowing in order that appropriate therapeutic measures may be
taken.

**VISUAL FIELD DEFICIT** - The inability to visually perceive information in a specific area of the visual field. This may involve left, right, one half or one quarter of the visual field.

**VOCATIONAL REHABILITATION COUNSELOR** - A counselor who assesses a person’s employment potential and helps the person prepare for employment.

**WORD FINDING** – The ability to search for and locate words from the learned vocabulary when they are needed.
UofL Health - Frazier Rehab Institute Brain Injury Program

SCOPE OF SERVICES

The UofL Health - Frazier Rehab Institute Brain Injury Program provides comprehensive services to individuals who have experienced a brain injury and to the individuals’ families and support systems. The program serves patients of all ages, with the goal of restoring individuals to optimal levels of physical, cognitive, and emotional recovery following brain injury. The program also values community partnerships and collaborations that serve to increase wellness and awareness of brain injury prevention and management.

Because Frazier Rehab Institute provides services along the continuum of care, many patients and families are introduced to medical rehabilitation services while they are recovering in the acute care hospital. Each patient’s needs are different, so the recommendations for each patient will differ. Many patients transfer to Frazier Rehab Institute for inpatient rehabilitation, and some patients will be referred directly to outpatient community-based rehabilitation. Other patients may require different types of services (e.g., home-based), based on the patients’ needs and goals. A Frazier Rehab Institute admission liaison helps coordinate the patient’s care plan and communicates this to patients and families, to begin establishing a “roadmap” of the recovery plan.

Regardless of the setting in which services are delivered (inpatient or outpatient), the goals of the Frazier Rehab Institute Brain Injury Program include:

1. Provide a formally organized program for support and advocacy for the brain injured individual and family.
2. Educate families to understand the effects of the brain injury and the recovery process.
3. Educate patients and families on safety measures and precautions that promote optimal recovery and independence (e.g., decision-making, return to driving).
4. Address symptoms commonly associated with brain injury, such as behavioral challenges, safety/judgment, reduced self-awareness, and personality changes through psychological intervention and an interdisciplinary approach.
5. Improve thought processes, memory skills, planning, perception and judgment through cognitive retraining activities, often referred to as Cognitive Rehabilitation Therapy.
6. Improve mobility and self-care skills through focused therapy and care promoting physical recovery.
7. Encourage active participation and education of the patient’s family through attendance at the patient’s therapy sessions when appropriate, and through routine scheduled family teaching sessions.
8. Develop a comprehensive discharge plan for the patient by working closely with the patient and family to identify needed resources and services and make appropriate referrals.
9. Empower patients and families to prevent or minimize further injury and chronic disability of persons with a primary diagnosis of acquired brain injury.
10. Restore each person served to his or her fullest potential of independence and productivity at home, in the workplace, at school and in the community.

Commitment to Quality Brain Injury Rehabilitation Care
Frazier Rehab Institute is accredited by The Commission on Accreditation of Rehabilitation Facilities (CARF). CARF is an international, third party, independent, consultative accreditation process. This accreditation is voluntary and considered a gold-standard framework guiding best practices and care in brain injury rehabilitation. The Frazier Rehab Institute Brain Injury Program has been CARF accredited since 1993. Frazier Rehab is one of two CARF accredited inpatient rehabilitation brain injury specialty facilities in the state of Kentucky.

Certified Brain Injury Specialist (CBIS) Credentialed Staff
The Frazier Rehab Institute team has clinicians specializing in pediatric and adult brain injury treatment. Over 40 therapists within our Brain Injury Program hold a CBIS certificate, which demonstrates our organizational commitment to staff development and access to the latest brain injury research, treatment, and practice information. Additionally, we have two individuals who hold CBIST status, and can serve as instructors.

Certified Rehabilitation Registered Nursing (CRRN) Staff
Over 10 members of the Frazier Rehab Institute nursing team have achieved the CRRN credential, which validates their professional standing and specialty knowledge as rehabilitation nurses.

Commitment to Customer Satisfaction
The Frazier Rehab Institute Brain Injury team is both competent and compassionate. There is a strong commitment to providing the best environment, services, and education to assist the patient to achieve the highest level of independence possible.

Frazier Rehab Institute actively solicits and welcomes feedback from our patients, families, and other stakeholders to help guide and shape clinical programming, staff competency, quality improvement initiatives, and patient care efforts. Patient satisfaction data is gathered by an independent third party, Press Ganey, and informally gathered through specific programs and settings.

Commitment to Patient Safety
Frazier Rehab Institute demonstrates a commitment to patient safety by incorporating evidence-based safety practices into our clinical programs and staff competency. We are well equipped to safely deliver therapy services across the continuum, but also emphasize this as a component of successful community re-entry within patient and family training sessions. Some examples of our safety initiatives include Safe Patient Handling, Casa Colina Falls Risk Assessment, Error Prevention Training, Patient Safety Rounding, and a Safety Coach program.

BRAIN INJURY PROGRAM CONTINUUM OF CARE

INPATIENT REHABILITATION

Overview
The 15-story, state-of-the-art Frazier Rehab Institute is located in the downtown Louisville
medical campus, and is home to Frazier Rehab Institute’s Inpatient Brain Injury Rehab program. Positioned centrally in a thriving medical community, Frazier Rehab Institute is surrounded by acute care hospitals including UofL Health - Jewish Hospital (physically attached), Norton Children’s Hospital and Norton’s Hospital (attached by pedway), the University of Louisville Hospital Level 1 Trauma Center, and the University of Louisville James Graham Brown Cancer Center down the street. The University of Louisville Department of Physical Medicine and Rehab and Restorative Neuroscience are physically located in the Frazier Rehab Institute facility, and provide support to our Brain Injury Program.

Persons Served
The Inpatient Brain Injury Program is available to patients of all ages at any level of recovery after injury – from coma to mild brain injury. The Brain Injury program offers services to people who have had a traumatic brain injury or a non-traumatic brain injury (e.g., anoxic or hypoxic events, exposure to toxic substances, brain tumors, and infections). Frazier Rehab also hosts a unique EMERGE program for patients with disorders of consciousness, or low-level brain injury.

Patients may be eligible for inpatient admission to Frazier Rehab Institute if they:

1. Sustained a brain injury that requires the availability of a physician and nursing care 24/7

2. Are medically stable at time of admission/transfer according to the following general parameters:
   - All vital signs stable
   - Free of fever for at least 48 hours
   - Adequate nutrition/hydration (orally or by feeding tube)
   - All medications adjusted/finalized and plans for use delineated
   - Must not require one-on-one care by a nurse
   - Must not require constant psychiatric intervention (e.g., chemical detoxification) or have been on active suicide precautions within 24 hours prior to transfer
   - All work up procedures and surgical interventions completed (or definite plans for either finalized)
   - Participation restrictions and activity limitations defined
   - Stable respiratory status with or without respiratory support device (i.e., tracheostomy, ventilator, BiPAP/CPAP)
   - Does not demonstrate progressive, irreversible cognitive deficits which would preclude patient’s ability to participate in intense rehabilitation program
3. Patient has functional deficits requiring an intensive, interdisciplinary and highly coordinated acute rehab program not available as an outpatient, in a skilled nursing facility, or lesser level of care.

4. Have a caregiver willing to be involved in family teaching program, with the goal to care for the patient in the home setting

5. Demonstrate rehabilitation potential to participate in 3 hours of therapy per day (5 days/week) and require at least two or more therapy disciplines

6. Have insurance coverage/authorization and/or other financial arrangements/agreements established prior to transfer/admission.

The Frazier Rehab Inpatient Inter-disciplinary Team
The rehabilitation needs for patients recovering from an acquired brain injury are multifaceted. These patients require the knowledge and skills from several different professionals collaborating as a team to maximize each person’s potential for recovery and achieve the highest possible level of functional independence. The interdisciplinary team works together to advocate for services, given the constraints imposed by reimbursement/funding agencies.

With an interdisciplinary team model, multiple behavioral, cognitive, communication, and physical issues may be addressed without unnecessary duplication or fragmentation of services. The Frazier Rehab inpatient team members include:

- Physiatrist (rehab doctor)
- Consulting physicians
- Case managers
- Rehab nurses
- Nursing assistants
- Psychologists
- Neuropsychologists
- Occupational therapists
- Occupational therapy assistants
- Physical therapists
- Physical therapist’s assistants
- Speech-language pathologists
- Dietitians
- Pulmonary rehab clinicians
- Recreation therapists
- Rehab aides
- Chaplaincy services
- Language Services, Translators
- Family & Caregivers
Together, the members from these varied disciplines complete a comprehensive assessment process, treatment plan, and discharge plan designed to achieve the best functional outcomes possible. Consequently, many patients are able to return home and resume therapies in an outpatient setting.

**Inpatient Facility and Treatment Areas**

Frazier Rehab Institute offers inpatient rehabilitation to individuals who are recovering from brain injury on either an adult neurologic floor or the pediatric floor. Each of these inpatient floors has been specially designed for patients’ and families’ comfort, safety, privacy, and care needs. Patients are provided rooms that are well equipped to manage medical and nursing care and to allow family and friends to visit comfortably. A family member is permitted to stay overnight if the patient is staying in a private room. Families are welcome to reserve a dining room for a special family occasion.

Patient treatment areas offer:

- Complimentary Patient Valet Parking at facility entrance
- Spacious and comfortable private and semi-private patient rooms equipped with bathroom, plasma screen television
- Wireless Internet access throughout the campus and in patient rooms
- Private family conference and education space
- Safe Patient Handling equipment such as overhead lifts for standing, walking, and transfers.
- Orthosis Room
- Centrally located therapy gyms with spectacular views of the city skyline, where most PT and OT sessions are held
- Private Speech-Language Pathology offices
- Private treatment room for use when distractions need to be minimized
- Practice kitchen area for daily living skills
- Practice bathroom area for daily living skills
- Assistive technology resource center
- Aquatic Therapy Pool

Additionally, our pediatric unit hosts:

- Colorful therapy gym with an array of pediatric-specific equipment and toys
- Sensory Integration Gym equipped with swings, slides, and climbing apparatus.
- Ronald McDonald House Charities of Kentuckiana Family Resource Room
- LaRosa Lounge recreation area of group activities and/or dining
- Outdoor playground

The equipment available in the neurologic therapy areas can be used for general rehab purposes, but was primarily selected to meet the needs of the neurologically involved patient. Our therapeutic approach and equipment address difficulty with balance, sitting, mobility, self-care, vision, cognition, behavior, emotions, communication and swallowing. A few examples of the technology and techniques we have available to the brain injury patient are:

- Dynavision™ for visual perception
- Biometrics™ for upper extremity rehab
- Robots for improving shoulder/elbow, wrist and hand movement
- Motomed™ for exercise and retraining
- Nusteps™ for exercise and retraining for functional electrical stimulation
- Deep physical agent modalities including ultrasound, electric stimulation, and anodyne
• Bioness™ for functional electrical stimulation
• Dynamic splinting for upper extremity functional return
• Serial casting and medications for spasticity management
• Modified constraint induced movement therapy
• Fluoroscopy for the swallow evaluation
• Endoscopy for the swallow evaluation
• Swallow therapy including neuromuscular electrical stimulation
• Frazier Water Protocol
• Aphasia therapy and cognitive rehabilitation
• Ramps, curbs, stairs, and parallel bars for ambulation therapy,
• Animal assisted therapy
• Assistive technology and wheelchair seating resource center
• Car for practice getting in and out of a vehicle.

Inpatient Individualized Plan of Care
Each member of the interdisciplinary acquired brain injury team is responsible for components of the integrated plan of care designed to achieve the best functional outcome possible. Members of the team meet frequently to discuss and revise this plan of care to meet the changing rehabilitation needs of the patient.

The Frazier Rehab Institute inpatient rehab program operates seven days per week. Adult and pediatric patients should expect to receive at least 3 hours of therapy five of every seven days.

Inpatient therapy begins as early as 7:30 am and can continue until approximately 4:30 pm. Each patient’s schedule is adjusted as needed to best suit his/her progress and needs. Some therapy may take place in the patient’s room, for example basic self-care activities involving grooming, dressing, and hygiene. Other activities are better suited to spaces where the specialized therapy equipment is located. Some therapy activities might occur in other parts of the building and campus, including the outdoor therapy area. On occasion, the therapists may accompany the patient on a community outing.

Most therapy sessions are provided one-on-one with patients. Co-treatments (two therapy disciplines teaming up to treat the patient together) or group therapies may be indicated for some patients. Group therapies typically are provided in addition to the three hours of individual therapy patients receive five of every seven days.

Great communication leads to the best care and optimal rehab outcomes. A case manager’s role is to link the family, patient, and rehab team and coordinate the care plan for each patient. This role requires frequent communication between team members, communication with insurance companies to report progress and advocate for patients continued therapy needs, communication with family members to ensure education and patient and family preparedness for discharge. This communication may be accomplished through individual meetings with the case manager, weekly team meetings with the rehab physician and team members, and/or additional team and family meetings. The case manager also serves as the leader of communication with community partners to identify services, support, and equipment that will be needed after inpatient rehab. The case manager is an expert on community resources including post- acute rehab services, transportation agencies, brain injury support groups, and financial programs (i.e. assist them in conserving their financial resources to meet their long-term care needs). Case managers provide the patient and family with recommendations relative to their existing financial resources and relative to alternative financial programs such as the Traumatic Brain Injury Trust Fund, Acquired Brain Injury Waiver program, and Vocational Rehab services. The case manager will
also work with community partners such as Child Protective Services (CPS) and Jefferson County Public Schools (JCPS) as an academic liaison for pediatric patients.

Caregiver teaching is essential to a patient’s safe and successful discharge to home. Caregivers attend therapy sessions to learn how to best care for the patient and to support what the patient learns in therapy for carryover at home. A Brain Injury Caregiver Education and Support group is offered twice weekly, specifically to educate and support our program patients.

OUTPATIENT REHABILITATION

Overview
Recovery from a brain injury is a long-term process. While most patients are discharged home after only a few weeks of inpatient rehab, ongoing services are often needed to continue the recovery process. The highly skilled professionals at Frazier Rehab recognize how difficult it is for survivors and families to cope with the effects of brain injury. Therefore, the rehabilitation team invests special care to make patient/family-specific recommendations to support a patient’s recovery.

Patients may be eligible for outpatient admission to a Frazier Rehab program if there is:

- A diagnosis of acquired brain injury or other neurological injury
- A reasonable expectation that the rehab program will improve functional ability, slow the deterioration of a progressive illness, or provide family/caregiver with necessary education to manage the patient in a home-like setting.
- A treatment plan supported by a physician.

Patients are referred for outpatient therapy services from a variety of sources and providers, including acute care hospitals, emergency departments, inpatient rehabilitation, home health agencies, skilled nursing facilities, outpatient rehabilitation facilities, community advocacy groups (e.g. Brain Injury Alliance of Kentucky), primary care physicians, nurse practitioners, and specialists (e.g. neurology, neurosurgery, physiatry).

Upon referral for outpatient therapy, insurance verification is performed to ensure benefit coverage for referred services. Typical payer sources for outpatient programs include commercial insurance plans, Medicare, Worker’s Compensation, or Kentucky Vocational Rehabilitation.

The outpatient brain injury rehabilitation services offered by Frazier Rehab fall under two types of programs:

1. **Individual outpatient services designed to address specific therapeutic interventions**
   a. Not every brain injury requires the full spectrum of care. Frazier Rehab Institute has an extensive outpatient rehab network that can provide expert therapy services based upon individual needs for physical therapy, occupational therapy, speech language therapy, assistive technology consultation, and driver assessment and training.
   b. Frazier Rehab proudly offers specialized therapies and evaluations at over 20 locations in the region.

2. **Frazier Rehab Institute’s NeuroRehab Program**
   a. The NeuroRehab Program is a comprehensive outpatient neuro-rehabilitation program for adolescents through adults who have sustained an acquired brain injury or other neurological injury, including:
b. Traumatic Brain Injury
c. Stroke
d. Concussion (mTBI)
e. Aneurysms
f. Brain Tumor
g. Anoxic Brain Injury

The NeuroRehab Program is comprised of an interdisciplinary team of experts, including speech-language pathologists, occupational therapists, physical therapists, and psychologists who address all aspects of rehabilitation - physical, cognitive, vocational, social/interpersonal, and emotional in an integrated framework.

They provide individualized treatment plans based on collaboration with other specialists (e.g., physiatrists, neuropsychologists, neuro-optometrists) patients, support systems, and insurance plans.

Treatment plans include a combination of individual therapy, therapeutic groups, vocational rehab services to facilitate return to work, academic re-integration, pre-driving skills assessment, community-based support groups, and more.

The NeuroRehab Program operates Monday through Friday 8 a.m. to 5 p.m.

The goals of the Outpatient Brain Injury Rehabilitation Programs are similar to those of the Inpatient Program, with a focus on maximizing the patient’s recovery and restoring to a meaningful, fulfilling, and maximally independent lifestyle.

**Specialty Outpatient Services**

**Concussion Management**
UofL Health also offers concussion management services that encompass a variety of options including a Concussion Helpline managed by Frazier Rehab Institute staff. This helpline facilitates access to medical appointments with a concussion specialist, neuropsychological evaluation, and evaluation and treatment by member(s) of the NeuroRehab team. Clinicians working at the NeuroRehab Program answer the Concussion Helpline seven days per week triaging calls to identify needs and assist in navigating services if needed.

**Driving Evaluation**
Frazier Rehab Institute hosts a comprehensive outpatient-based driving program that specializes in pre-driving evaluation, behind the wheel evaluation, individualized driving training, and vehicle and equipment evaluation. This program is led by a Certified Driver Rehab Specialist.

**HOME-BASED REHABILITATION SERVICES**

**Home Health Care**
Patients may require therapies be provided in the home for a period of time, due to travel/accessibility, patient needs, and caregiver support. Frazier Rehab Institute can make referrals to home care agencies if preferred by the patient and family.

**Residential Placements**
Some patients may continue to require 24 hour nursing care and a less intense level of therapy and may be discharged to a skilled nursing facility after inpatient rehabilitation, while other patients may need a
more intensive, longer term residential treatment program to achieve more progress before being able to return to the home setting.

Frazier Rehab Institute case managers facilitate appropriate referrals for skilled nursing facility placements and specialized residential brain injury programs if necessary.

**COMMITMENT TO BRAIN INJURY ADVOCACY, SUPPORT & WELLNESS**

**Brain Injury Support and Advocacy**
The Brain Injury Alliance of Kentucky (BIAK) is a strong alliance in our effort to educate and support awareness of brain injury in our community. The BIAK’s mission is to serve Kentucky citizens whose lives have been affected by brain injury through advocacy, education, prevention, research, service and support. Frazier Rehab Institute supports this organization’s mission through philanthropic activities and fundraisers, board membership, and other activities. A representative from the Brain Injury Alliance of Kentucky (BIAK) visits Frazier Rehab Institute routinely and is available to meet patients and families or elicit a peer support person from the community upon request.

**Self-Advocacy**
Shared care plans are portable health profile cards that are by an individual to communicate their health needs, status, and history to future providers. At Frazier Rehab Institute, patients and families are encouraged to complete these profile cards-including health conditions, medications, and other health information- as a part of the therapy process. This encourages active participation and communication of health needs as patient’s resume community-based care with various providers and specialists.

**Ongoing Support Systems**
Frazier Rehab Institute hosts a monthly Brain Injury Survivor Support Group at the NeuroRehab Program, 4912 US 42. This community based support group offers education and social networking and is available to Frazier Rehab Institute patients and anyone in the community who has sustained a brain injury. Peer support has proven invaluable to many people who have survived a brain injury. The Frazier Rehab Institute NeuroRehab Program also offers a support group for caregivers of acquired brain injury survivors.

**Maintaining Wellness and Fitness after Brain Injury**
Frazier Rehab Institute has developed the Community Fitness and Wellness Center within the downtown Institute. Individuals with disabilities can join this program to improve cardiovascular/aerobic fitness, muscular strengthening and flexibility. The Community Fitness and Wellness Center is staffed by exercise science professionals and equipped with state of the art equipment. Scholarships are available to support the membership fees for patients with reduced ability to pay.