

Cerebrovascular Accident (CVA)

[PATIENT/FAMILY EDUCATION]



[I N T R O D U C T I O N]

If you have received this notebook insert you probably have a family member or loved one who has suffered from a stroke, also called a cerebrovascular accident or CVA and who is receiving rehabilitation services through WakeMed. The following information is being provided to help you understand the complex nature of strokes and the process of rehabilitation and recovery from the stroke.

The National Stroke Association defines a stroke as a brain attack that occurs when a blood clot blocks an artery (a vessel that carries blood to the body from the heart) or a blood vessel (a tube through which the blood moves through the body) breaks causing decreased oxygen to that part of the brain. Brain cells then die and brain damage occurs. When this happens the abilities controlled by that area of the brain are partially or completely lost. Things like speech, memory, and movement are affected. A stroke can be caused by an embolus, thrombus or a hemorrhage. Strokes are the 3rd leading cause of death in America and the number one cause of adult disability.

WakeMed Health & Hospitals is the only Joint Commission-certified Primary Stroke Center in Wake County. The WakeMed Stroke Team is made up of specially trained physicians, nurses and therapists, who are dedicated to the care of stroke patients. The stroke program at WakeMed begins in the emergency room with specialists who treat strokes emergently and provides a continuum of services from inpatient rehabilitation services to outpatient/day treatment rehabilitation. The WakeMed Stroke continuum is designed to provide appropriate services for the patient's specific impairments and level of functioning.

[THE BRAIN]

The human brain consists of millions of nerve cells (neurons). It weighs about 3 pounds and is jello-like in consistency. It floats in fluid (cerebral spinal fluid), is covered by protective membranes (meninges), and is enclosed in the bony skull (cranial vault). It communicates with the rest of the body through nerves running through the spinal cord and the peripheral nervous system. The brain is a large consumer of oxygen, which is supplied by a complex system of blood vessels.

The brain is sometimes referred to as “the organ of behavior” as it controls almost everything we do. It controls thoughts, memory, speech, emotions, sensory information, body movement, and the function of many other organs in the body. It is also responsible for the patterns of behavior we refer to as personality. The brain has four main sections, which include: the brainstem, cerebellum, the limbic system, and the cerebral cortex.

- **Brainstem:** The brainstem is the lowest part of the brain and connects the brain to the spinal cord. It is involved in regulating our level of alertness, and also controls basic bodily functions such as heart rate, breathing, body temperature, and digestion.
- **Cerebellum:** The cerebellum is located at the back of the brain. It is involved with movement, coordination, and balance.
- **Limbic System:** The limbic system is located above the brain stem deep inside the brain. It is involved in our emotional functioning and also plays a role in the ability to remember new information.
- **Cerebral cortex:** The cerebral cortex is the outer layer of the brain and is divided into left and right hemispheres, or halves. Each hemisphere controls movement and feeling in the opposite side of the body. The outermost inch of the cerebral cortex is composed of neuron cell bodies and is referred to as “grey matter”, because of its grey color. Below the grey matter is the “white matter”, which consists of incoming and outgoing axons that can be thought of as the arms of the neurons. These axons, or arms, start out at the neuron’s cell body, and reach out to connect with other neurons in different areas of the brain so that these different areas of the brain can communicate with one another. The cerebral cortex controls the highest levels of thinking and behavior. Each hemisphere is further divided into four lobes.
- **Frontal lobes:** The frontal lobes are involved in complex cognitive functions such as planning, organizing, initiating, monitoring and controlling behaviors or emotions. These are often referred to as “Executive Functions”. The center for speech is also located in the frontal lobe. In most people this is in the left frontal lobe.

- **Temporal lobes:** The temporal lobes control hearing and the left temporal lobe is involved in understanding language. Both temporal lobes are also involved with memory – the left temporal lobe for verbal memory and the right temporal lobe for visual memory.
- **Parietal lobes:** The parietal lobes process incoming bodily sensory information from the opposite side of the body. They are also involved in visual spatial information processing, and the left parietal lobe is involved in reading.
- **Occipital lobes:** The occipital lobes process visual information. They allow us to recognize and understand what the eyes are “seeing”.

[STROKE OR CEREBROVASCULAR ACCIDENTS (CVAS)]

Unfortunately, strokes (sometimes called "brain attacks" can attack any of the previously mentioned areas of the brain. When this happens partial or complete losses of function may occur.

Approximately every 40 seconds, someone in the United States has a stroke. A stroke can happen when the following occurs:

- A blood vessel that supplies blood to the brain is blocked by a blood clot. This is called an ischemic stroke.
- A blood vessel breaks open, causing blood to leak into the brain. This is called a hemorrhagic stroke.

If blood flow is stopped for longer than a few seconds, the brain cannot get blood and oxygen. Brain cells can die, causing permanent damage.

ISCHEMIC STROKE

Ischemic stroke is the most common type of stroke. Usually this type of stroke results from clogged arteries, a condition called atherosclerosis. Fat, cholesterol, and other substances collect on the wall of the arteries, forming a sticky substance called plaque. Over time, the plaque builds up. This often makes it hard for blood to flow properly, which can cause the blood to clot. There are two types of clots: A clot that stays in place in the brain is called a cerebral thrombus. A clot that breaks loose and moves through the blood to the brain is called a cerebral embolism.

Other causes of ischemic stroke include:

- Abnormal heart valve
- Inflammation of the inside lining of the heart chambers and heart valves (endocarditis)
- Mechanical heart valve

A clot can form on a heart valve, break off, and travel to the brain. For this reason, those with mechanical or abnormal heart valves often must take blood thinners.

HEMORRHAGIC STROKE

A second major cause of stroke is bleeding in the brain. This is called a hemorrhagic stroke. It can occur when small blood vessels in the brain become weak and burst. Some people have defects in the blood vessels of the brain that make this more likely. The flow of blood that occurs after the blood vessel ruptures damages brain cells.

[S T R O K E R I S K S]

High blood pressure is the number one risk factor for strokes. The following also increase your risk for stroke:

- Diabetes
- Family history of stroke
- Heart disease
- High cholesterol
- Increasing age

Certain medications make blood clots more likely, and therefore your chances for a stroke. Birth control pills can increase the chances of blood clots, especially in woman who smoke and who are older than 35.

Men have more strokes than women. But, women have a risk of stroke during pregnancy and the weeks immediately after pregnancy. The following can increase the risk of bleeding into the brain, which makes you more likely to have a stroke:

- Alcohol use
- Bleeding disorders
- Cocaine use
- Head injury

To help prevent a stroke:

- Avoid fatty foods. Follow a healthy, low-fat diet.
- Do not drink more than 1 to 2 alcoholic drinks a day.

- Exercise regularly: 30 minutes a day if you are not overweight; 60 - 90 minutes a day if you are overweight.
- Get your blood pressure checked every 1 - 2 years, especially if high blood pressure runs in your family.
- Have your cholesterol checked. If you are at high risk for stroke, your LDL "bad" cholesterol should be lower than 100 mg/dL. Your doctor may recommend that you try to reduce your LDL cholesterol to 70 mg/dL.
- Follow your doctor's treatment recommendations if you have high blood pressure, diabetes, high cholesterol, and heart disease.
- Quit smoking.

S Y M P T O M S

The symptoms of stroke depend on what part of the brain is damaged. In some cases, a person may not even be aware that he or she has had a stroke. Symptoms usually develop suddenly and without warning. They may be episodic (occurring and then stopping) or they may slowly get worse over time. Symptoms may include:

- Change in alertness (consciousness)
- Coma
- Lethargy
- Sleepiness
- Stupor

[I S C H E M I C S T R O K E]

- Unconsciousness
- Withdrawn
- Difficulty speaking or understanding others
- Difficulty swallowing
- Difficulty writing or reading
- Headache
 - + Occurs when lying flat
 - + Wakes you up from sleep
 - + Gets worse when you change positions or when you bend, strain, or cough
 - + Starts suddenly
- Loss of coordination or balance
- Movement changes, usually on only one side of the body
- Difficulty moving any body part
- Loss of fine motor skills
- Nausea or vomiting
- Seizure
- Sensation changes, usually on only one side of the body
- Decreased sensation
- Numbness or tingling, usually on only one side of body
- Sudden confusion
- Weakness of any body part but usually on one side of body
- Vision changes
- Decreased vision
- Loss of all or part of vision

T R E A T M E N T

A stroke is a medical emergency. Immediate treatment can save lives and reduce disability. It is important to get the person to the emergency room immediately to determine if the stroke is due to bleeding or a blood clot so appropriate treatment can be started within 3 hours of when the stroke began.

Our goal throughout the continuum and during your stay here at WakeMed Rehabilitation is to provide you with best rehabilitation that is available. The overall goal of long-term treatment is to help you recover as much function as possible and prevent future strokes.

To accomplish this WakeMed Rehab provides a comprehensive treatment team comprised of specialized rehabilitation doctors (physiatrists), nurses, physical therapists and assistants, occupational therapists and assistants, speech-language pathologists, therapeutic recreation specialists, case managers, neuro-psychologists, dieticians, and rehabilitation aides. You will participate in a variety of group and individual therapies tailored to meet your needs throughout your stay.

[I M P A C T O N F U N C T I O N A L A R E A S]

A stroke has the potential to affect many areas of a person's functioning. In order to ensure rehabilitation is comprehensive, the rehabilitation treatment team addresses all the major functional areas. These include medical management, cognition, communication, behavior, mobility, self-care and the psychosocial aspects of care. WakeMed's Stroke treatment protocols and the patient's Plan of Care are organized in this manner. These functional areas, and how a stroke can impact them, are described below.

M E D I C A L

Depending on the nature and severity of the stroke, there may be other medical issues resulting from the stroke that can impact recovery and the course of a patient's rehabilitation. Some individuals may have difficulty breathing initially, so a tracheotomy tube may need to be placed in the neck to help them breathe. Even when they recover the ability to breathe on their own, the tube may remain in place for a while longer to help clear secretions from the trachea. The ability to produce an audible voice is temporarily affected by the presence of this tube. During the course of rehab, a patient may have an objective study performed to ensure least restrictive diet and prevent pneumonia. A Modified Barium Swallow Study (MBS) is performed in Radiology using fluoroscopy to observe the path of food and liquids as they enter the

body. A Fiberoptic Endoscopic Evaluation of Swallowing (FEES) is more commonly performed on the Rehab unit where a tiny camera is inserted in the nose to observe the food or liquids as well. Results of these studies will help the MD and SLP decide what diet is safest. Food may be chopped or pureed and liquids may be thin or thickened to different consistencies.

Many individuals with strokes have trouble swallowing safely (dysphagia). In some cases a feeding tube must be inserted through the nose to give liquid nutrition. When the swallowing problems are severe and likely to last a long time, a gastrostomy feeding tube (PEG) can be surgically placed in the stomach. This allows liquid nutrition to be given in large amounts several times a day instead of continuously dripped in, and is often more comfortable for the patient. Generally, this tube can be removed once swallowing improves.

When a brain is injured from any kind of neurological insult including strokes, it becomes more sensitive to developing seizures. Seizures are caused by abnormal electrical discharges in the brain. Symptoms may vary depending on the part of the brain that is affected, but seizures often cause unusual sensations, uncontrollable muscle spasms, and even loss of consciousness. Medications can be used to stop seizures and to prevent them from occurring.

Another problem commonly seen in individuals with strokes is spasticity.

[IMPACT ON FUNCTIONAL AREAS]

Spasticity is a condition in which muscles are continuously contracted. This abnormal increase in muscle tone results from a faulty signal from the brain to the muscles. The stiffness and tightness of the muscles may interfere with movement, speech, and the quality of walking. The degree of spasticity can vary from mild muscle stiffness to severe, painful, and uncontrollable muscle spasms. Treatment for this will depend on the particular individual's circumstances, but could include such things as medications, and stretching exercises.

COGNITION

Cognition is another word for thinking skills and includes such things as attention, memory, language, visual-spatial abilities, and executive skills. Cognition is frequently adversely affected by strokes. Cognitive changes with strokes are more likely seen with someone who has had a CVA on the right side of the brain.

Cognitive deficits can vary from mild to severe or profound, depending on the severity of the stroke and the stage of recovery a person is in. Cognition often shows improvement as recovery progresses. Also, some areas of cognition may be more impaired than others.

For example a person may have severe memory problems, but relatively intact visual perceptual skills. Individuals in the early stages of recovery from a stroke may have

difficulty staying awake and alert.

Sometimes, individuals with a stroke are awake and alert, but are very confused and restless and have a limited ability to understand the world around them. If the patient is functioning at this level of cognitive impairment, he or she may have problems with irritability, restlessness, poor attention, poor memory, difficulty solving everyday problems, and insight (difficulty understanding what changes have happened since the stroke).

Because of confusion and memory difficulties, the patient may “confabulate” or talk about things he or she thinks happened but which did not. As they improve and begin to understand what has happened patients often begin to participate more meaningfully in therapies and other activities. For example, the patient may be able to start to participate in dressing, feeding and bathing him or herself again, with assistance and guidance.

Some individuals with strokes will have less severe cognitive impairments, or will have more severe impairments in some areas of cognition, and mild or no impairment in others. Many patients who start with more severe cognitive deficits may show significant improvement, and eventually have less severe impairment in some or all areas of cognition. The patient may remember some things from day to day, and may be fully oriented (meaning they know who they are, where they are, and what date and time it is). The patient may be able to

dress independently, and eat independently. However, some amount of supervision and assistance might be needed due to things like poor short-term memory, poor perceptual skills, or other cognitive deficits. The patient may not be able to see these cognitive problems and may try to do things the same way he or she did before the stroke.

In strokes of the least severity, or in patients with the highest recovery, cognitive deficits are subtle, and would not be noticed by people who did not know the person before the stroke. They may still include mild memory deficits, but also difficulties in planning and organizing their day-to-day functioning, particularly in complex activities like working or going to school. Rehabilitation efforts at this level are focused on teaching the patient strategies to help them in these areas.

COMMUNICATION

Speaking, listening, reading, writing and gesturing are all ways we communicate. Having difficulty speaking and /or understanding words is called "aphasia" and this is usually associated with strokes on the left side of the brain. Patients with aphasia may have problems doing some or all of these things. Problems communicating can range from mild to profound depending on the nature and severity of the stroke. Individuals with the most severe strokes are unable to communicate at first. They may

sometimes have their eyes open, and appear to be awake, but may not be able to speak or respond to you.

Some individuals can follow simple directions and may be able to talk using simple words or gestures (for example, the patient may point to a cup to tell you he or she wants something to drink), but may have difficulty finding the right words to say. Words said may not always make sense.

Patients may also experience "dysarthria" where weakness of the face, lips, tongue and larynx (Voice box) may cause speech to be "slurred" and unintelligible.

Apraxia can also be the result of a stroke. This is a motor planning disorder that can cause the patient to know what word they want to say but have difficulty planning the speech sounds. They may appear to be "searching" for a word with long delays in initiating speech.

Your speech pathologist will evaluate and recommend treatment for these communication and swallowing problems in Rehab. Generally as the patient improves, communication skills become more and more accurate.

MOBILITY

Mobility is about movement, whether it is going from laying down to sitting up, walking to the bathroom, or wheeling a wheelchair down the hall. In order to move

[IMPACT ON FUNCTIONAL AREAS]

the body, the brain must coordinate balance, strength and motor control.

Areas of function that can affect mobility in a person with a stroke are:

- **Balance** – allows upright posture without falling over.
- **Strength**– the amount of power that your muscles have.
- **Coordination**– the smooth movement of multiple body parts in harmony.
- **Sensation** – the body has several types of sensation, all of which are interpreted by the brain:
 - + Hot/cold and sharp/dull
 - + Deep pressure
- **Proprioception** – tells the body where it is in space
- **Tone** – an increased resistance to movement, a common problem in stroke patients, particularly troublesome if it overpowers available active movement. Tone can increase with laughing, coughing, sneezing, infection, fever or impaction. Tone is easily mistaken for active movement, but it is not under the patient's control.
- **Range of Motion** – Orthopaedic injuries, increased muscle tone, or changes in motor control can reduce the patient's ability to maintain joint flexibility.
- **Posture** – An individual's ability to sit up or stand including head position is controlled by the brain. The stroke may also affect vision, perception, and motor control, all of which play a part in posture.
- **Motor Control** – a combination of strength, balance, coordination and sensation to produce purposeful, controlled movement.
- **Motor planning** – the selection of the correct motor plan, including starting, continuing, and stopping a desired movement appropriately.

Mobility deficits in stroke patients are most commonly addressed by the physical therapist in Rehab. Here at WakeMed we use a variety of approaches to facilitate mobility, and we encourage the patient to use the affected side of the body as much as possible to retrain those muscles and pathways in the brain.

[ACTIVITIES OF DAILY LIVING]

ADL'S

Activities of Daily Living (ADL's) are all the activities people engage in on a daily basis including work, school, leisure, and self-care activities. Self-care activities include: grooming, bathing, dressing, toileting, and performing toilet and shower transfers. Initially, it's obvious a patient can't work or go back to more complex activities, but he or she also may not be capable of basic self-care due to a combination of cognitive and physical factors. Patients may be totally dependent upon others to care for them. In less severe strokes, or as patients with more severe strokes begin to recover, they are often able to resume aspects of self-care starting with the simplest (such as assisting a therapist with wiping one's face) and moving to the more complex (such as dressing one's self with little or no assistance).

Performing activities of daily living and regaining your independence in these areas is a focus of our occupational therapy department.

LEISURE SKILLS

Having physical and cognitive changes often leads to a decrease in one's ability to participate in leisure activities in and outside of their home. Our therapeutic recreation specialists can help you find new ways to enjoy your favorite hobbies and activities.

PSYCHOSOCIAL

A stroke patient's psychological functioning and psychosocial situation may be severely disrupted by the stroke. The degree of disturbance is usually determined by the severity of the stroke and degree of cognitive deficits. Early in their recovery patients often cannot understand what has happened to them and are highly confused. They may be very fearful or angry and have no control over their emotions leading to inappropriate behavior. To families, they may not seem as if they are the same person. Because of their continued cognitive problems, explanations or even attempts to "counsel" them are ineffective. They do, however, sometimes respond well to family support. As patients recover they may begin to be able to understand their situation and what's happened to them. At this point they are at risk for depression or other adjustment difficulties and need to be closely monitored.

Every family is different but for most the idea of long-term recovery from a stroke can be overwhelming. However, the injured brain can often heal and the changes can be inspiring. Along with the hope that recovery brings is the balance of acceptance of more permanent changes. This sets the foundation for effective coping and can often be the most challenging aspect of rehabilitation for patients and families.

[ACTIVITIES OF DAILY LIVING]

Patients are affected by their stroke in many ways, beyond their cognitive and physical functioning. Family members and caregivers are also affected by the patient's stroke.

Patients and families may experience a range of emotions that will change from time to time. Some examples of these emotions include:

- Disbelief
- Anger
- Guilt
- Depression
- Isolation
- Panic
- Hope

It is important to recognize that these emotions are normal, and an expected part of the process of trying to understand and cope with a patient's stroke. A stroke affects not only the patient, but everyone else who knows and cares about that person. It is also important to recognize that the young children or grandchildren of patients can be very distressed and upset by the stroke. It can be a very confusing time for children, and their daily routine is often very disrupted. We recommend that families try to "normalize" children's routines. If possible, children of patients with strokes should return to their normal school and activity routine as soon as possible. If you are not sure how to explain the patient's stroke to a child, or if you have questions about how to prepare the child to visit the patient for the first time, a consultation with one of WakeMed's Child Life Specialists can be arranged.

Similarly, spouses and other family members may want to consider trying to return to as normal of a routine as possible. You should try to get adequate rest and good nutrition, and not feel guilty that you are not at the hospital continuously, particularly after the patient transfers to the Rehab Hospital or Neuro Care Unit. The patient will be busy during the day with therapies and other activities, and will need rest breaks between therapies.

RECOVERY

One of the first questions families ask when told a family member has had a stroke is "how long will it take my family member to get better?" Unfortunately, we usually don't know the exact answer to that question. One thing we do know is that recovery from a stroke is a gradual process that may continue for months and even years.

It is everyone's goal to maximize the patient's recovery and ability to live independently or with very little help. Some individuals will eventually reach the goal of being able to live independently, and return to activities such as work and driving; however, others may continue to need more help from family and friends. There is no promise how much or how quickly each person may recover. Each person recovers at his or her own pace.

[REHABILITATION SETTINGS]

Stroke rehabilitation occurs in many settings throughout the WakeMed system. The patient may pass through several different rehabilitation settings as he or she recovers from the stroke, and different people spend different amounts of time in each setting. When a person progresses from one setting to the next, therapists communicate with one another to maintain a good continuity of care.

ACUTE HOSPITAL

If a patient suffers a stroke and is admitted to WakeMed for emergency medical management of his or her stroke, he or she will typically begin to receive rehabilitation services as soon as medical stabilization occurs, often within the first 24 hours following a stroke.

NEURO CARE UNIT

This acute hospital unit at WakeMed is specially designed for individuals with more severe injuries and strokes, who are medically stable, and can benefit from coordinated rehabilitative services, but may need more time to recover before being ready to move to the next step.

While on the Neuro Care Unit, each patient's schedule will be individualized to accommodate the patient's current level of functioning. Therapies available include occupational therapy, physical therapy, and

speech therapy. In addition, patients typically receive neuropsychological services, and therapeutic recreational services are available on an as-needed basis. Therapies are available Monday through Friday, with a typical schedule being occupational, physical, and speech therapy one to two times per day. However, this may vary depending on the individual needs of the patient. Patients may be scheduled for therapies any time between 9 am and 4 pm, usually with a break over lunch from Noon to 1 pm. Visiting hours are from 4 pm to 8 pm Monday through Friday, and 10 am to 8 pm Saturday and Sunday, or after scheduled therapies.

WAKEMED REHABILITATION HOSPITAL

If your family member needs intense, inpatient rehabilitation, he or she may be admitted to WakeMed Rehabilitation Hospital, where a coordinated, comprehensive rehabilitation program will be developed. While in the Rehab Hospital, each patient will get a minimum of three hours of therapy per day, five days per week. Therapy on weekends will be on an as needed basis. Available therapies include occupational therapy, physical therapy, and speech therapy. In addition, patients will receive neuropsychological services, and recreational therapy on an as needed basis. Pet therapy dogs visit on occasion as well. Typically, between 7 am and 8:30 am, the

[REHABILITATION SETTINGS]

occupational therapist will be assisting patients with ADL's (grooming, bathing, dressing, toileting, feeding). Patients may be scheduled for therapies any time between 8:30 am and 5 pm, with a break over lunch from Noon to 1 pm. The therapists assigned to the patient will set up the patient's Monday through Friday therapy schedule on the day of admission. A schedule card is placed in a plastic sleeve on the patient's wheelchair, with a copy posted in the patient's room. Saturday and Sunday therapy schedules will be posted in the same place each Friday evening.

DAY TREATMENT PROGRAMS

WakeMed Outpatient Rehab offers "day treatment" services. Individuals live at home, but come in several days a week for continued coordinated, multi-disciplinary care with oversight by a case manager. When attending day treatment program, each patient's schedule is individualized. The number of hours per day, and days per week of therapy to be given will be determined by the treatment team upon admission to the program, after the initial evaluation is completed. Therapies offered include occupational therapy, physical therapy, and speech therapy. In addition, neuro-psychological services, nursing services, and case management services are available.

OUTPATIENT THERAPY SERVICES

If less intensive services are needed, or if just a single service is needed, an individual may receive outpatient treatment at one of WakeMed's many outpatient rehabilitation sites. WakeMed currently offers outpatient rehabilitative services at several sites in Raleigh, as well as in Cary, Apex, Fuquay-Varina, Zebulon, and Clayton. When receiving outpatient therapy services, each patient's schedule is individualized. The number of hours per day, and days per week of therapy to be given will be determined by each individual therapist upon admission to the program, after the initial evaluation is completed. Therapies offered include occupational therapy, physical therapy, and speech therapy.

HOME HEALTH THERAPY SERVICES

If after discharge from the hospital the patient is home-bound, and meets certain criteria, WakeMed may send rehabilitation therapists to your home to provide rehabilitative services. The number of hours per day, and days per week of therapy to be given will be determined by each individual therapist after the initial evaluation is completed. Therapies offered include occupational therapy, physical therapy, and speech therapy. In certain cases, a nurse may also visit the home.

[FAMILY INVOLVEMENT]

Family involvement in a patient's care is both encouraged and appreciated. Family members are considered important members of the treatment team, and good family support and involvement can be very important to a patient's overall recovery. There are a number of ways in which we involve families.

CASE MANAGEMENT

The clinical case manager serves as the team leader and as a point of contact for patients and their families with the medical/therapy staff. The case manager can help the patient and his or her family with personal, financial, emotional, and social issues that may arise during the hospital stay. The case manager will meet with the patient and/or family upon admission to rehab to provide an overview of the rehab process. At this meeting, the case manager will gather information about the patient in order to assess needs and allow the team to know the patient better. The case manager can also arrange individual and group counseling to help patients and families learn to cope with problems resulting from the stroke. The case manager also provides information to insurance companies for their review of the patient's hospital stay.

The case manager can assist patients and families in coping with the emotions that occur throughout the recovery process. Depending on comfort level, patients and families can participate in individual

counseling or participate in a support group meeting. The case manager can also refer patients and families to ongoing counseling in the community. There are also a number of legal and financial issues that may need to be addressed, if the patient is going to be hospitalized and/or incapacitated for a period of time. Examples of these issues can be:

- Guardianship
- Advanced Directives
- Short Term/Long Term Disability
- Supplemental Security Income (SSI)
- Social Security Disability Income (SSDI)
- Power of Attorney
- FMLA paperwork

The case manager will also be the patient and family's point-person for discharge planning. Throughout a patient's hospital stay, the case manager will be discussing options that are available for discharge, and will work with the patient and family to plan for a safe discharge. Patients are typically discharged from the inpatient rehab program when they have achieved their discharge goals or progressed to a level that allows them to receive rehab services in a home care setting, outpatient center, or alternative care setting. Occasionally, patients are discharged if they fail to demonstrate significant progress in therapies over a period of time, or cannot tolerate the level of therapy required by the program. Preparing for discharge from the rehab unit can be very overwhelming for many patients and families. The case manager will be available throughout a patient's stay to discuss

[FAMILY INVOLVEMENT]

discharge needs and options, and to ensure a safe, smooth discharge from the rehab unit.

Whether a patient is going back home or to another location, the case manager will work with the patient and family to determine the best way to make this transition. If going home at discharge is not an option, the case manager will help to find a nursing home or assisted living facility that can continue to meet the patient's needs. If the patient is to return home at discharge, and will continue to need therapy, outpatient rehab, day treatment, or home health services can be arranged. The case manager will arrange follow up therapy and order any equipment needed before the patient leaves the hospital. The case manager can make referrals to community resources that can continue to help the patient and family after discharge.

MEDICAL ROUNDS

During the stay in the Neuro Care Unit or Rehab Hospital, the Physiatrist (a physician who specializes in physical rehabilitation) and a Physician Assistant (PA) will visit with patients every morning. They will address any active medical issues and make any necessary changes in care. This may include changing medication, ordering tests to diagnose new problems or monitor existing ones, and referring to other health care specialists to address specific issues. The doctor and the PA will work closely with the nursing staff, case manager, and the therapy

staff, and will meet with them formally every week to coordinate care. If necessary, they will also bring in other physician specialists to assist with a patient's care.

If there are medical questions or concerns, please bring them to the attention of the nurse or case manager.

NURSING CARE

Upon admission to the Neuro Care Unit or Rehab Hospital, the admitting nurse will do a complete physical assessment including heart and lung sounds and examination of skin for wounds, rashes or reddened areas. The patient and family will be given a copy of My Important Papers which will have helpful information including patients' rights, advance directives, pain management, and unit-specific information. The patient and family will be asked to answer questions as part of a nursing admission assessment. They will also be asked to sign a consent form granting permission for use of the "whiteboard" in the patient's room. The white board is used to record important information needed to coordinate the physical care of the patient. For example, it will indicate how much, and what type of assistance a patient needs with transfers to and from the wheelchair. Caregivers can look at this board and have a snapshot of what is needed to care for the patient.

We always encourage family participation in a patient's day-to-day care. We will try to

include families during personal care, if family is present and willing to participate. We ask that families do not try to transfer patients to or from the bed, wheel chair, or commode, or provide personal care, until they have had training by the nursing or therapy staff (formal family education sessions will be set up by the case manager). Nursing staff will provide education to patients and families regarding care, medications, and medical conditions. Our goal is to enable the families to care for patients in the safest possible way as they reach their fullest potential.

Upon admission to one of our day treatment programs, the patient and family will meet with a Rehabilitation Nurse who will do a complete physical assessment. During the initial session with the nurse the patient and family will be asked to provide information regarding any current medical issues, a list of current medications, and a list of follow up physician's appointments. The nurse will provide written and verbal education to patients and families regarding stroke and recovery and will continue to be available as needed throughout the day treatment stay.

FAMILY TRAINING SESSIONS

At some point in a patient's rehabilitation, often shortly before discharge from the hospital, or prior to a planned day pass, family members who will be responsible for caring for the patient will be invited to accompany the patient to his or her therapies, so that instruction can be provided on such things as assisting with walking, assisting with bathing and dressing, assisting with transferring the patient to and from the wheelchair, bed, commode, car, etc. Teaching on special dietary or swallowing precautions, or administration of medications might be provided as well. This training is designed to prepare families to be able to care for the patient when he or she is discharged from the hospital. Depending on the needs of each individual patient, sometimes families will only need to attend one session. Other times, multiple sessions will be needed. The case manager will be responsible for arranging these sessions at a time that is as convenient as possible for the patient's family.

[WHAT THE PATIENT WILL NEED WHILE IN THE HOSPITAL]

Patients who are receiving inpatient rehabilitation on the Neuro Care Unit, or in the Rehab Hospital will typically be dressed in street clothes each morning, so they will need several changes of clothing. Loose fitting clothing like T-shirts and elastic waist pants are the best choice. The patient will also need a good pair of shoes such as sneakers. Dirty linen will be gathered in a bag in the patient's bathroom, to be laundered by the family. Families are asked to bring in personal toiletries, such as deodorant, shampoo, body wash that the patient prefers to use. Electric razors may also be brought in. Other personal items such as radios or CD players can be brought in, but the hospital cannot be responsible for lost or stolen items. If you have family pictures or albums labeled with names and dates, we would love to incorporate this in their therapy.

Lists of favorite TV shows, hobbies, music, and other preferences are helpful also.

[R E S O U R C E S]

This notebook insert was meant to provide you with introductory information about stroke and the rehabilitation process. As you become more familiar with strokes, you will probably have many more questions.

WakeMed's staff has a great deal of expertise and experience in this area and will provide you further information or answer your questions throughout the rehabilitation process. In addition, you may find the resources listed below helpful:

National Stroke Association:

<http://www.stroke.org>

American Stroke Association:

<http://www.strokeassociation.org>

Resources from the Mayo Clinic:

<http://www.mayo.edu>

A guide from American Medical Association:

<http://www.ama-assn.org>

CVA Stroke Support Group:

Raleigh Area Stroke Support Groups:

Second Tuesday of each month

Noon - 1 pm

WakeMed Raleigh Campus Rehabilitation
Hospital, Health Park

For more information, call 350-4163

Clayton Area Stroke Support Group:

Third Wednesday of each month

Noon - 1 pm

WakeMed Clayton Medical Park

For more information, call 350-4174

Cary Area Stroke Support Group:

First Monday of each month

6:30 - 8 pm

WakeMed Cary Hospital

Conference Room A

For more information, call 460-9094

WakeMed Stroke Network:

See your Case Manager for details about having a former patient who has had a stroke come and talk to you.

Rehabilitation Facilities

[WAKEMED REHABILITATION LOCATIONS]

INPATIENT LOCATION

WakeMed Rehabilitation Hospital
3000 New Bern Avenue
Raleigh, NC 27610
Admissions: 919-350-7876

OUTPATIENT LOCATIONS

WakeMed Raleigh Campus
(includes Cardiac Rehab)
3000 New Bern Avenue
Raleigh, NC 27610

WakeMed Raleigh Medical Park
23 Sunnybrook Road, Suite 300
Raleigh, NC 27610

WakeMed Clayton Medical Park
555 Medical Park Place
Clayton, NC 27520

Wake Forest Road
3701 Wake Forest Road
Raleigh, NC 27609

WakeMed North Hospital
10000 Falls of Neuse Road
Raleigh, NC 27614

WPP-Physical Therapy at North
(located in the Physicians Office Pavilion)
10010 Falls of Neuse Road,
Suite 015
Raleigh, NC 27614

**WPP-Physical Therapy at
Cambridge Village of Apex**
10000 Cambridge Village Loop
Apex, NC 27502

WakeMed Cary Hospital
(exclusively for pelvic health & lymphedema)
1900 Kildaire Farm Road
Cary, NC 27518

Cary
(includes Cardiac Rehab)
300 Ashville Avenue, Suite 220
Cary, NC 27518

WOUND CARE

WakeMed Wound Care
WakeMed Raleigh Campus
3000 New Bern Avenue
Raleigh, NC 27610

HOME HEALTH

WakeMed Home Health Services
2920 Highwoods Boulevard
Raleigh, NC 27604

SPECIALTY

OUTPATIENT FITNESS PROGRAMS & GENERAL FITNESS

WakeMed Healthworks
3000 New Bern Avenue
Raleigh, NC 27610

Referrals & Questions
Inpatient: 919-350-7876
Outpatient: 919-350-7000
WPP-PT practices: 919-350-1508
Wound Care: 919-350-4515
Home Health: 919-350-7990

WakeMed Rehab locations at Raleigh Campus, Raleigh Medical Park, Clayton Medical Park Wake Forest Road and North Hospital operate under the license of the WakeMed Raleigh Campus. WakeMed Rehab locations at Cary Hospital and on Ashville Avenue operate under the license of WakeMed Cary Hospital. WPP-PT locations operate as independent practices.