



Welcome to the Neuroscience Critical Care Unit (NCCU)



THE OHIO STATE UNIVERSITY

WEXNER MEDICAL CENTER

Visitor Information

We understand that this is a difficult time for you and your family. We hope this information helps you during your visit. For more information, please read the Patient and Visitor Guide or visit wexnermedical.osu.edu/guide.

- **Your family member is in the NCCU in room _____, on the 10th floor** of the The Ohio State University Comprehensive Care Center – Arthur G. James Cancer Hospital and Richard J. Solove Research Institute.
- **Family and friends may reach you at (614) 685-6500.** As a courtesy to other family members, please limit calls to 5 minutes. Please note this phone does not dial outside of the hospital.

About the NCCU

We care for patients with various injuries or problems of the brain and spine or nervous system. Your loved one is in excellent hands.

The care team includes nurses, doctors, advanced practice nurses, pharmacist, dietitians, respiratory therapists, physical therapists, chaplains, family support coordinators, patient care assistants and unit clerical assistants.

Specialized doctors guide the care given to your loved one. They will keep you up to date on your loved one's condition. If surgery is needed, the surgeon may serve as the lead doctor in their care.

Check in

The waiting area is often staffed with a hospital volunteer or Family Support Staff to support patients' families.

Please check in at the desk when you arrive and tell us when you leave the unit, so we can contact or locate you if needed. If staff have stepped away, please check in at the unit clerk desk.

Limit visitors to 2 at a time

Please keep visits brief to allow your loved one time to rest and to get needed care.

No visitors under the age of 18. Exceptions may be considered in some situations.

We ask that visitors:

- Not use the bathroom in the patient's room.
- Not bring food or drinks into the patient's room.
- Stay in the patient's room or waiting area. Do not stand in the hallway or doorway.

Our visitor policy may change based on patient health and safety needs.

Wash your hands to protect your loved one

Wash your hands with soap and water in the waiting area sinks or clean your hands with alcohol-based hand sanitizer before and after every visit. Clean hands help to prevent infections.

For a digital copy of this book, please visit go.osu.edu/pted3503.

For more health information, go to wexnermedical.osu.edu/patiented or contact the Library for Health Information at 614-293-3707 or health-info@osu.edu.

NCCU Care

NCCU care team

You or your loved one will receive care from a team of experts throughout the hospital stay. The number of people involved in your care or your loved one's care may seem overwhelming at times.

The NCCU care team coordinates the care for patients in the NCCU. **The attending doctor is the doctor in charge.** This doctor may be a:

- Neurologist – a doctor who cares for patients with brain or nervous system problems
- Neurosurgeon – a doctor who cares for patients who need surgery on the brain or spine

Most questions about your care or your loved one's care can be answered by the nurse. If you have other concerns or have feedback to share, please contact:

- Patient Experience at 614-293-8944
- Nurse Manager at 614-688-9826
- Assistant Nurse Manager at 614-366-0030

To learn more about the doctors providing your care or your loved one's care, please visit wexnermedical.osu.edu and select "Find a Doctor."

Family contact person

We ask that each family choose one family member as the point of contact. This person will be notified of any significant change in the patient's condition. We ask that the family contact person share information with the other family members. The family contact person will need to use the **privacy code** to call in for updates by phone. For critically ill patients who are not able to speak for themselves, this family contact is often the main legal decision maker.

The NCCU care team talks with one family contact to ensure that the chief decision maker receives all updates. Other family members may take part in meetings and updates, but the family contact person should always be involved so that they are aware of the patient's condition.

Family contact: _____ Privacy code: _____

Personal belongings

Please take all valuables home. The hospital is not responsible for any damaged or lost items.

Shift change

Your health care team will change 2 times each day:

7 a.m. to 7:30 a.m.

7 p.m. to 7:30 p.m.

Patience is appreciated during this transition.

Reaching nurse

To reach the nurse, please use the call button. Please do not call or approach the nurses station. This helps us to better respond to your request and care for other patients.

Family meetings

The NCCU team may request formal meetings with the patient's family to discuss issues related to care. These meetings are often organized by the social worker, doctor or nurse, and will occur in the family conference rooms within the NCCU.

What to Expect in the NCCU

Rounds and treatment plans

During the morning, the NCCU care team visits all patients to develop treatment plans for the day. Visitors may be present during rounds, but time constraints may limit our ability to provide updates.

During the afternoon, the NCCU care team follows up on test results, performs procedures and responds to new medical issues. The team updates patient family members on the condition of their loved one.

Alarms and equipment

Patients in the NCCU may have many machines, pumps and monitors in their room for their care. Each piece of equipment has alarms that help the nurse check the patient and that signal if there is a change in the patient's condition. Each alarm has a different meaning and requires a different type and urgency of response.

Please do not attempt to silence the alarms or to adjust any of the medical equipment. If you are concerned that an alarm has not triggered a response from the care team, please tell the nurse.

Transfer or discharge

A patient's stay in the NCCU may be long. Much of the healing and recovery of brain and spine injuries occurs after a patient leaves the NCCU. A patient in the NCCU is discharged or transferred when they are stable and no longer critically ill. Patients often have other medical issues and care needs that are managed in other units of the hospital.

Our goal is to help our patients return to the best and most independent level of function. Many patients with severe brain and spine or nervous system injuries may need rehabilitation or placement in a care facility at the end of their hospitalization.

Case managers and social workers work with the NCCU care team and the family to plan the next steps of the patient's recovery. Where you go after the NCCU is based on your medical needs, insurance coverage and facility location preference.

Expect the discharge planning team to start talking about discharge early in the hospital stay, even before a discharge date is set.

Living Will

We want to respect and be consistent with the patient's goals, values and beliefs about their care. **Please provide your loved one's Living Will to the NCCU care team. This document describes their end of life care wishes.**

While precautions are taken to stabilize patients in the NCCU, there is risk for lung and heart failure. These conditions need emergency treatment, such as shocking the heart, placing a breathing tube and doing other treatments. If your loved one has specific wishes about end of life care, please communicate these to the NCCU care team. When we know the patient's wishes, we can honor these wishes in an emergency situation.

The team may ask about the patient's resuscitation wishes or ask if the family has legal paperwork that specifies the patient's wishes if the family has not provided this information.

Conditions and Problems

This is an overview of some of the common conditions and problems treated in the NCCU. If you would like more information about your loved one's condition, please ask your nurse or other members of the care team. Also, if you do not understand, please tell us so we can explain it in a different way.

Bleeding in the brain or intracerebral hemorrhage

This is a less common type of stroke known as hemorrhagic stroke. The bleeding can happen over minutes or hours and the signs depend on what part of the brain is bleeding. It is often caused by small blood vessels that leak or break, but it can also be larger blood vessels.

Care first involves controlling the bleeding to reduce pressure and swelling in the brain. The amount of bleeding, the location of the bleeding, and the age and health of the patient impact the effects of this type of injury.

Stroke or ischemic stroke

Ischemic stroke is the most common type of stroke. It may be caused by a blood clot that forms within the brain vessels or by a clot that forms elsewhere in the body and travels to the brain. Signs of a stroke include sudden weakness, numbness, loss of vision and problems speaking.

The first goal in caring for the stroke patient is to remove the blockage of the vessel. Treatment options for this goal are many, but time is limited. Patients with severe stroke or those at risk for deterioration are admitted to the intensive care unit (ICU). The size of the brain tissue damage and the location of the stroke will impact the patient's condition.

Aneurysm rupture or subarachnoid hemorrhage

This is bleeding that occurs in or around the brain. It is caused by a rupture in a weak part of a large blood vessel. This problem occurs suddenly and often without warning. Some patients may have a severe headache. Rupture of an aneurysm is an emergency and is often life threatening.

The first goal for treatment of a patient with this problem is to find the location of the aneurysm, close off the weak opening and prevent a second bleed. If there has been injury to the brain because of low blood flow, it can result in a stroke.

Seizures or status epilepticus

Seizures are sudden, uncontrolled, electrical changes in the brain. They may cause violent shaking and convulsions, or they may be silent and alter alertness. Frequent and repeated seizures can damage the brain if not controlled. Most patients in the NCCU are monitored for seizures.

Medicines may be used to control seizures. Seizures can happen from bleeding in the brain, strokes, growths or tumors in the brain, infections and other causes. Testing may be done to find the cause if it is not known.

Brain and spinal cord trauma

Also called traumatic brain injury, this often occurs from a motor vehicle or bike accident, fall or fight. There may be different types of injuries to the brain, but there may also be injuries to the spine, chest, abdomen and bones. This type of injury may cause bruising, bleeding and swelling in the brain that can worsen the patient's condition in the first days after the accident.

Weakness of the nerves and muscles

Diseases, such as Guillain-Barré syndrome, myasthenia gravis and ALS (amyotrophic lateral sclerosis or Lou Gehrig's disease), can affect the way nerves and muscles work with each other. This can result in weakness of muscles in the face, eyes or body, and in some cases it makes it hard for the person to breathe. A breathing tube and a machine, called a ventilator, may be needed for treatment.

Procedures

Ventriculostomy

A ventriculostomy is a small, hollow tube placed into the spinal fluid filled cavities of the brain, called ventricles. A small hole is drilled through the skull to insert this tube. The tube, also called EVD or external ventricular drain, is placed for a variety of reasons. It is one of the most helpful monitors in the ICU to check the pressure within the brain. The tube can also be used to drain spinal fluid to reduce pressure in the brain or to remove blood from the ventricles. In certain cases, medicine can be injected into the tube to treat the brain.

Intracranial pressure (ICP) monitor

The intracranial pressure monitor, also called a bolt, may be placed in the brain instead of placing the ventriculostomy. This ICP monitor is smaller and is positioned in the brain tissue instead of the fluid filled ventricles. This monitor is able to provide constant pressure measurements, but it cannot be used to drain fluid from the brain or to give medicines.

Intracranial monitoring catheters

These are small, flexible tubes that are placed through small holes drilled into the skull. The catheter tip is placed near the area of injury to check blood flow, oxygen levels and various chemicals in the brain. Intracranial monitoring catheters are commonly used in patients suffering from traumatic brain injury, intracerebral hemorrhage and subarachnoid hemorrhage. Because of the small size and flexibility of the catheter, its placement is very safe. Catheters are left in place for only as long as they are needed and most are removed after 7 days. You may hear these called cerebral blood flow, brain tissue oxygen and microdialysis monitoring catheters.

Equipment used in the NCCU

This is an overview of some of the equipment that may be used in the NCCU. Please ask if you have questions or would like to know more.

Breathing machine or ventilator

This is a machine that helps a patient breathe by giving oxygen through a tube. It can be adjusted to provide full to limited support of the breathing process. It can be adjusted to give the person extra oxygen and pressure to keep the airways open. The goal is to remove the breathing machine as soon as the person is able to breathe on their own.

Breathing tube or endotracheal tube

This tube is used to keep the airway open and prevent fluid from the mouth from getting into the lungs if the person is not awake. It may also be used with a breathing machine if the person is not able to breathe on his or her own. The tube is not painful, but it may cause anxiety if the person is awake. Medicines may be used to keep the patient comfortable and calm. If the person needs a breathing tube for a longer period of time, a breathing tube may be placed in the neck. This is called a **tracheostomy**.

Special IV lines called central or arterial lines

A **central line** is a tube placed into a large blood vessel, called a vein, in the chest, neck or upper leg. This line may be used to take blood samples, give medicines or to check pressures to be sure there is the right amount of fluid in the body.

An **arterial line** is a tube placed into a blood vessel, called an artery, in the wrist or upper leg. This line can be used to check blood pressure and the amount of oxygen in the blood.

Brain wave monitor (continuous EEG)

Wires, called electrodes, are attached to the head to check the brain's activity. This is used for patients who have seizures but also to check the overall health of the brain, the amount of sedation and the extent of disease or injury of the brain.

Feeding tube or PEG tube

Patients with brain and spinal cord injuries may not be able to eat because they are not alert or because they have swallowing problems. A tube may be put into the mouth or nose to the stomach for feeding to prevent choking and to provide nutrition. If a feeding tube is needed for a longer time, a PEG tube is placed into the abdomen. PEG stands for percutaneous endoscopic gastrostomy. This can be used for as long as needed to provide nutrition to the patient.



THE OHIO STATE UNIVERSITY

WEXNER MEDICAL CENTER

wexnermedical.osu.edu