Your Hospital Stay

The Intensive Care Unit (ICU)

After Your Surgery

Your surgeon will provide your family an update after your surgery.

After this, there will be a delay before your family can come see you in the Intensive Care Unit (ICU). Your family can wait in the ICU family/visitors lounge during this time.

You will be brought to the Cardiovascular Intensive Care Unit (CV-ICU), an area designed for patients who have undergone Left Ventricular Assist Device (LVAD) implant surgery. During this time, the ICU nurse will receive important information about your care.

Once your nurse finishes settling you in, your family will be welcomed into the ICU to see you.

Visitation Policy

Our visitor policy below may change temporarily due to the COVID-19 pandemic. Please see our Michigan Medicine Visitor Guidelines page for the most updated information by clicking on this link: https://tinyurl.com/ypm63mhw

We welcome the presence of loved ones.

- In alignment with Michigan Medicine, the Cardiovascular Intensive Care unit welcomes the presence of loved ones. "Family" members are welcome at your bedside 24 hours/day. We want you to feel supported, not only by the care we provide, but by your loved one's presence as well.
- Family, for purposes of visitation, is defined by you and is usually one or more individuals who play a significant role in your life. "Family" members may be related in any way—biologically, legally, or emotionally. Thus, a patient's family member may include a person(s) who is not legally related to the individual.
- At times, we may ask your family members to step out of the room if procedures or other necessary patient interventions need to be done. Your family will be welcomed back as soon as possible.

Your Care Team

A doctor “makes rounds” by visiting all of his/her patients at the bedside.

Intensivists Staff

- Intensivists are doctors who care for you during your ICU stay and work closely with your surgeon to decide your plan of care.
- They meet several times a day to review your changing conditions and needs.
- Starting around 8:00 a.m., the ICU doctors and other team members begin making “rounds” to see how you are doing. This is a good time to discuss your medical care, progress and steps toward discharge. The doctors will also “round” on you in the afternoon beginning around 3:00 p.m.

Advance Practice Team

- The Advance Practice Team is made up of Nurse Practitioners and Physician Assistants who coordinate your care with your surgeon. They are available 24 hours a day.

Nurse Clinical Care Coordinators

Our Nurse Clinical Care Coordinators from the Center for Circulatory Support provide specialized education, discharge planning and ongoing support to our VAD patients and families.

Nursing Staff

Nurses who specialize in the care of LVAD patients will care for you during your hospital stay.

- Nurse to Nurse bedside report is performed every shift.
    - During report, the nurses going off and coming on report meet by your bedside to talk about your care. They will discuss the plan for the day or any test(s) you are scheduled for during the shift. This helps us to provide consistent care.
    - You and your family are invited to participate.
    - Questions are welcomed and encouraged.

Rehabilitation Team

Occupational Therapists (OT) and Physical Therapists (PT) are part of your rehabilitation care team. OT and PT will create a rehabilitation program that is tailored to your specific needs to help you regain function and become as independent as possible.

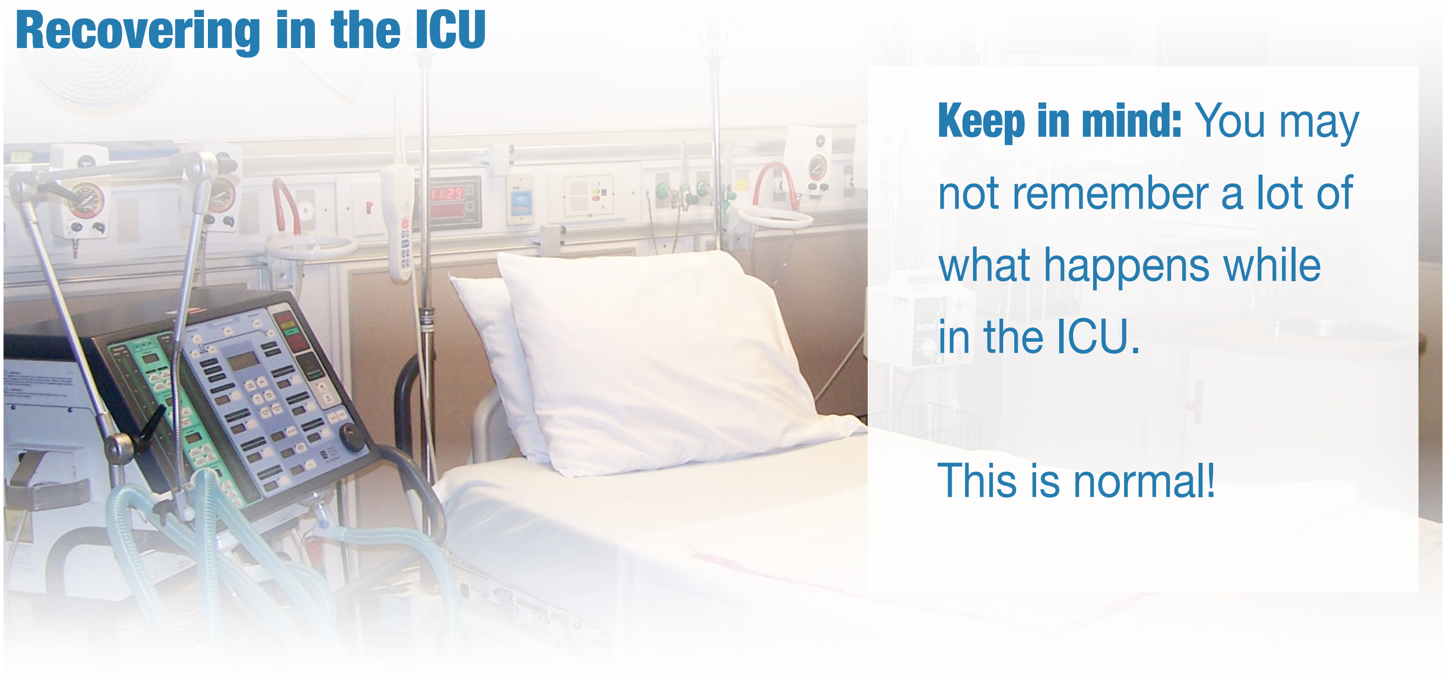
Care Managment Team

- **Nurse Case Manager** (discharge planner): Our case managers help to ensure a smooth transition between your inpatient stay and home care needs. They will visit you during your stay and arrange any medical needs you may have after discharge. You and your family will be given their contact information.
- **Social Work:** If needed, a social worker will meet with you and your family to ensure that the proper support system is in place at home to assist in your recovery.

We encourage you and your family to participate and ask questions.

Patient Care Technicians (Tech)	• The Patient Care Staff will assist your nurse with your daily care.
Inpatient Diabetes Management Team	• The Inpatient Diabetes Management Team will monitor your blood sugar levels. They make recommendations to your Surgeon to help keep your blood sugar under control.
Dietician	• A dietitian is available to answer questions about your dietary needs and preferences. Information about specific diets is available in the hospital.

Recovering in the ICU



Keep in mind: You may not remember a lot of what happens while in the ICU.

This is normal!

An intensive care unit (ICU) can often be an overwhelming place, both for the patient and their families. The sights and sounds of the ICU can be intimidating. The following information is important for you and your family to review to help you understand what you are seeing and hearing.

What will my family experience when they first come to visit?

When your family visits for the first time it can be quite a shock. You will have lots of tubes, wires and drains attached to surrounding equipment. Your skin often looks pale and feels cool to the touch. Your face and hands may appear puffy or swollen. ***Sometimes*** soft wrist restraints are necessary for your safety until you are fully awake. These restraints are tied loosely to the bed to prevent you from accidentally pulling out your tubes. This is all normal after LVAD implant surgery.

Delirium

What does delirium look like?

- Confusion, may not know familiar people's names
- Inability to pay attention/focus
- Quiet and withdrawn
- Flat emotions
- Unusually tired
- Agitated or restless
- Personality changes
- Saying things that do not make sense

People at risk for delirium include:

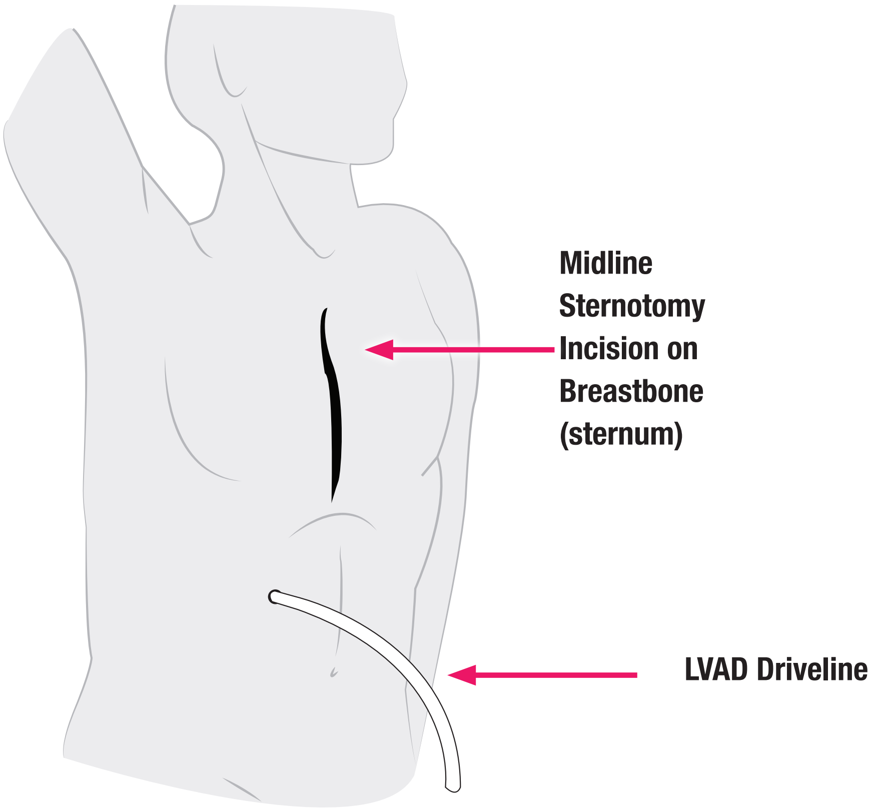
- People in the Intensive Care Unit (delirium affects 82 out of 100 people in the ICU)
- Anyone older than 70 years old
- People who have had a recent surgery
- Anyone in the ICU
- People who are experiencing pain
- People who are not getting enough nutrition (Malnutrition)
- People with impaired vision or hearing

How to prevent it:

- Be aware of the signs and symptoms and tell the nurse if you notice them
- Bring your glasses, hearing aids, and dentures to the hospital
- Bring familiar objects from home such as family pictures
- Have a family member stay with you during your stay as much as possible
- If able, eat and drink regularly

Incisions

During LVAD implant surgery, the routinely used incision is the **midline sternotomy.**



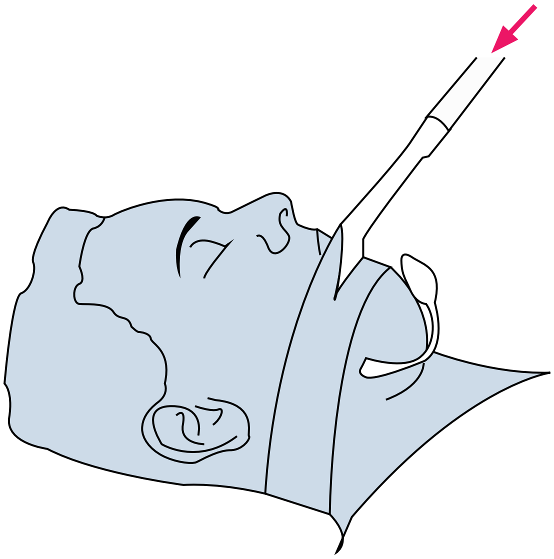
What are all these tubes around me?

What types of tubes, wires and equipment will be attached to me after surgery?

After surgery, you will wake up to a team of health care professionals and lots of equipment. It's normal to have tubes and wires attached to your body. They help staff check your vital signs, take blood, give medications or fluids, and drain body fluids.

The following is a brief description of some of these tubes, wires and what you can expect upon awakening. If you have any questions, the medical team is here to help explain.

What are all these tubes around me?



Endotracheal Tube (Breathing Tube):

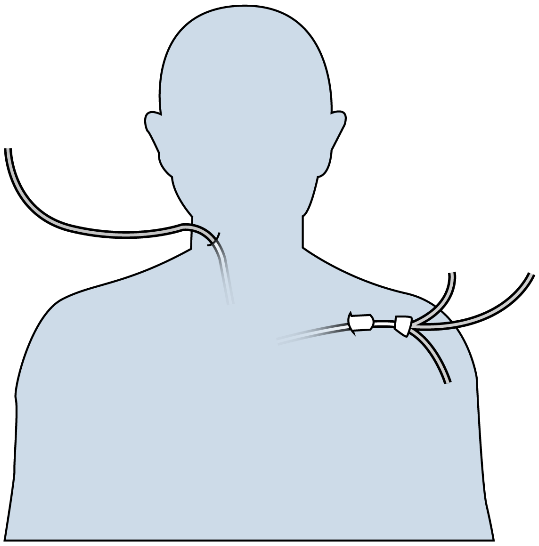
At first you will be too sleepy to breathe on your own. There will be a breathing machine (ventilator) helping you. The breathing machine blows air into your airways through a breathing tube. One end of the tube is placed through your mouth into your windpipe and the other end is attached to the breathing machine.

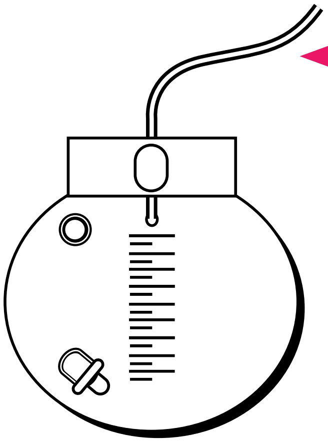
There may be alarms that sound when you are on the ventilator. The alarms may be distracting, but they don't always mean that something is wrong. The respiratory therapist and your nurse will answer these alarms and explain the cause.

Our goal is to remove the breathing tube as soon as it's safe.

Pulmonary Artery Catheter (Swan-Ganz Catheter):

The pulmonary artery catheter is a long, thin tube that is inserted into a large vein in your neck. It is used by your medical team to monitor how well your heart is pumping and to give you medications. It is usually removed 1-2 days after your surgery.





Urinary Catheter:

In the operating room, you will have a catheter placed into your bladder to drain urine. During this time, you will not need to worry about using the toilet.

It helps the medical team measure the amount of urine you make and monitor how well your kidneys are working.

The catheter usually stays in for 1-2 days.

Oral-Gastric Tube (OG Tube):

The oral-gastric tube is in place when you have the breathing tube. It is placed in your mouth and passed down to your stomach. Its job is to make sure your stomach is empty.

The oral-gastric tube is removed when the breathing tube is removed.

Insulin Infusion

While you are in the operating room, your blood sugar is being checked regularly. This is continued during your entire hospital stay. The stress of surgery can make your blood sugar go up even if you do not have diabetes. We watch your blood sugar levels closely to reduce your chance of getting an infection and having other complications.

Typically you will be placed on a continuous intravenous (IV) infusion of insulin to keep your blood sugar levels less than 150. You will also receive a shot of insulin with each meal and at bedtime.

What sounds will I hear?

Unique alarms are set on each monitor and machine. You will hear different noises like alarms and beeping. Most alarms do not signal an emergency. The heart monitor and/or the breathing machine (ventilator) will alarm when a patient moves or coughs. These new sounds may be concerning, but they are normal. Please see a staff member with any concerns.

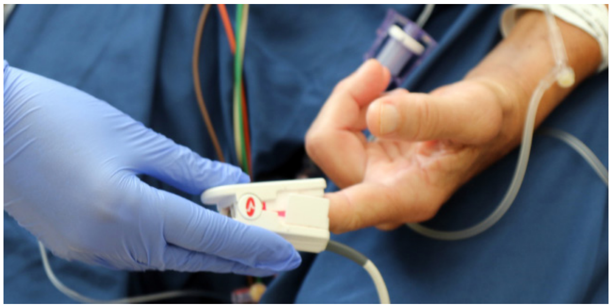
What are all these tubes around me?

Arterial Line:

The arterial line is a catheter that is placed in your wrist or groin. The arterial line allows the medical team to continually see your blood pressure. It also allows for your blood to be drawn without having to be poked.

The arterial line stays in place until you are ready to move to the step down unit.

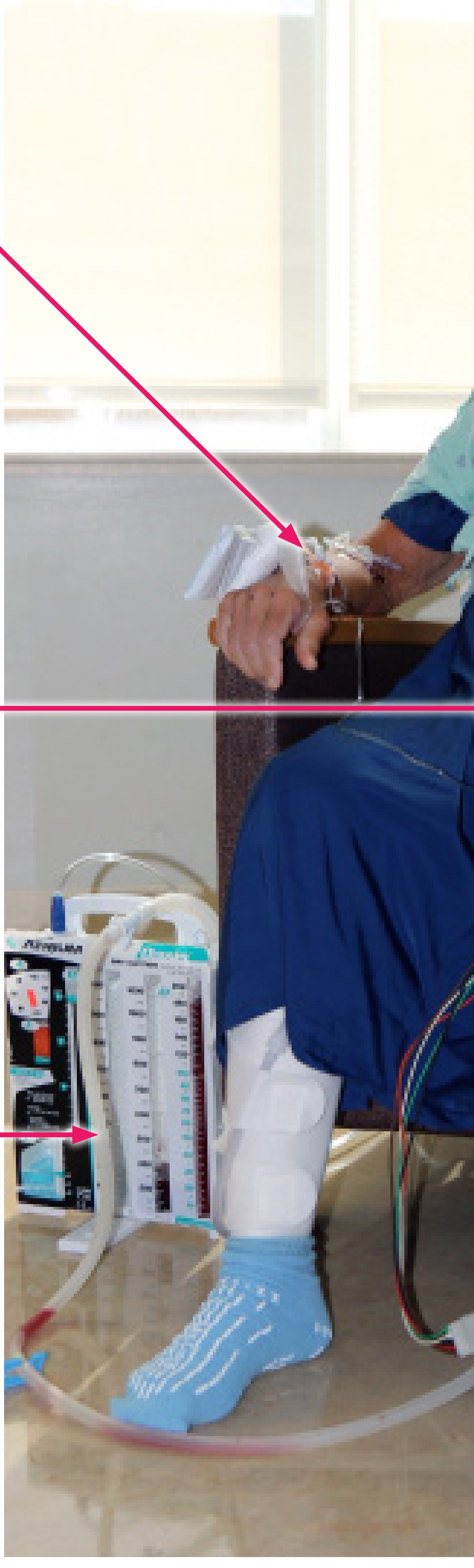
Pulse Oximeter: Pulse oximetry is a way to measure how much oxygen your blood is carrying. A clip-like device called a probe is placed on a body part, such as a finger or ear lobe. The probe uses light to measure how much oxygen is in your blood. This information helps your health care provider decide if you need extra oxygen.



Chest Tube:

After your operation, it is normal for some fluid or blood to drain from your chest into the area around your heart and lungs. During your surgery, thick tubes are put in to drain any extra blood or fluid that may collect. The chest tubes come out of your chest and drain into a box.

The tubes are removed when the fluid has decreased – the specific time will vary person to person. Typically 1-2 days after surgery.



Dressing that covers incision

Heart Monitor:
Following your operation, a heart monitor will be placed on you to provide a constant recording of your heart's activity. It is used by your doctors and nurses to determine if your heart is beating normally.

The monitor screens will be located at your bedside and at the nurses' station.

Our highly trained nurses will watch the heart monitor at all times. If an alarm sounds, it does not necessarily mean there is a problem with your heart.

Sequential Compression Device (SCDs):
SCDs are placed on your calves and squeeze your legs intermittently to help prevent a blood clot from forming.

What are all these tubes around me?

Epicardial Pacemaker:
While you are in surgery, your surgeon may place temporary pacemaker wires onto your heart. These wires exit the body through your skin and are attached to a pacemaker. A pacemaker is an electronic device that provides an electrical signal to help your heart beat if needed.

The pacemaker wires are temporary and will be removed just a few days before you are discharged from the hospital.

Support Stockings (TEDs):
These stockings are used to prevent blood clots from forming in your legs. You will keep them on during your hospital stay and when you return home.

See the discharge instruction for more information about your home use of TEDs.

What to Expect in the ICU

In the ICU, our goal is help you recover from surgery and get back to your everyday life. The following are descriptions of the activities that will help you get home more quickly.

What will my diet be in the ICU?

Once your breathing tube comes out and your stomach wakes up, you may be able to start slowly drinking and eating. At first, you will be given clear liquids such as ice, Jell-O®, juice, popsicles, or broth.

Once you can tolerate clear liquids, you will be given solid foods that are low in fat, cholesterol, and no added salt.

Poor appetite after surgery is common. You may feel nauseated, or just have no desire to eat. This is normal. When you eat, you may notice you have lost your sense of taste. However, it is very important for you to eat to support the healing process.

Room service is available at any time of the day. Your nurse will bring you a menu so you can choose what you would like to eat. It is fine for your family to bring food from home, but it should be low in salt and low to moderate in fat.

It is very important for you to eat to improve the healing process.

Pain and Discomfort after Heart Surgery

What kind of pain can I expect to feel after surgery?

It is normal to experience pain after your surgery. You may be surprised to feel pain in places other than your incision site, especially as you begin to be more active. Please tell a member of your healthcare team about the pain you have after surgery, which can include:

Muscle pain: You may feel muscle pain in your chest, back, neck, shoulders or legs. This is from lying on your back on the operating table and in the intensive care unit.

Pain from chest tubes: You may have some discomfort from the chest tubes that were placed in your chest to drain fluid, blood and air during heart surgery.

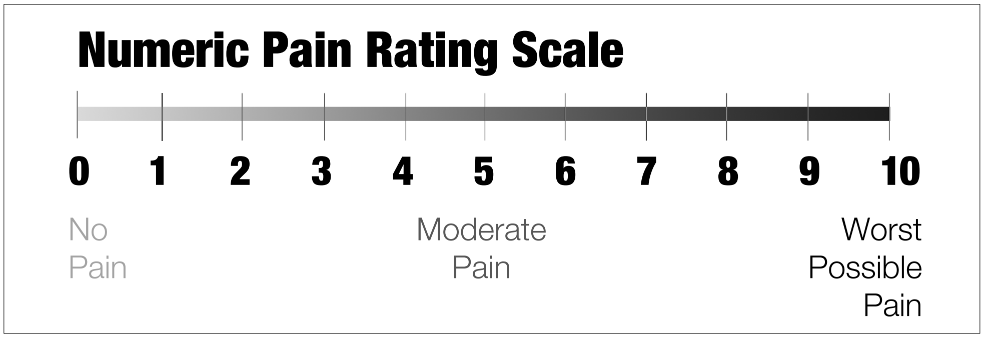
Incision pain: You may feel pressure or burning at the incision site(s).

Who is going to help manage my pain in the hospital?

Your doctor will order pain medication for you to take. Your nurse will ask you about your pain at regular intervals throughout your recovery, but do not hesitate to ask for pain medication if needed. Throughout your hospital stay, the nurses will monitor your need for pain medication. You should ask for pain medication when you need it.

The Numeric Pain Rating Scale is a helpful tool you can use to describe how much pain you are feeling and to measure how well treatments are relieving your pain. You will be asked to rate your pain using a 0-to-10 pain scale. Zero means “no pain”. Ten means the “worst possible pain”.

Zero means no pain. Ten means the worst possible pain.



Why is pain management so important?

Having good pain control not only helps you feel more comfortable, but also helps you recover faster and may reduce your risk of developing certain complications, such as pneumonia and blood clots. If your pain is well managed, it will make it easier to sit up, walk, cough, deep breathe, and eat.

What Exercises will I do After Surgery?

Exercise is an important part of the recovery process after surgery. Below are activities you will be expected to perform during your hospital stay:

Deep Breathing and Coughing

- ☐ Use your breathing machine (Incentive Spirometer) 10 times every hour while you are awake. For example, if you like watching TV, you should be using your Incentive Spirometer 2-3 times during each commercial break.

How to Use an Incentive Spirometer

By BruceBlaus - Own work, CC BY-SA 4.0

https://commons.wikimedia.org/w/index.php?curid=59619985

Tips when using the incentive spirometer:

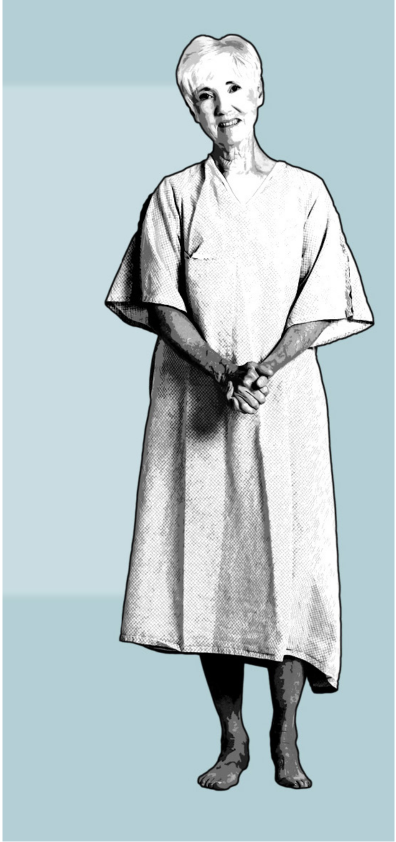
- Do not get discouraged if you do not reach the number marked for you. You will improve with practice as your body heals.
- If you start to feel dizzy or light-headed, remove the mouthpiece from your mouth and take some normal breaths. Once you feel better, continue using the incentive spirometer

Walking:

Beginning the first day after your surgery, you will have the following exercise goals:

- Sit in the chair 3 times a day
- Walk the hallway 4 times a day

Your Nurse, Physical Therapist and Occupational Therapist will be there to help you.



Walking Goals:

- Walk multiple times a day to build your endurance.
- Walk at a comfortable speed.
- Time your walk so you can continue to walk the same amount of time once you return home.
- Add another minute to your walk each day.
- Increase your pace when you are able to walk for 30 continuous minutes.
- Walk for 30 minutes 4-6 days a week when you go home.

Repositioning

To prevent pressure injuries during your hospital stay, you need to change your body position. The following recommendations will help you reposition yourself:

While in bed:

- Turn your body at least every 2 hours from side to side.
- Keep the head of your bed at a 30-degree angle or lower to prevent too much pressure on your bones.
- Place a pillow between your ankles and knees when lying on your side.
- Place a pillow under your lower legs to elevate the heels when lying on your back.

When sitting:

- Change your position every 15 minutes by tilting your body forward or to the side so that your bottom lifts off the seat.
- Stand up or do “pushups” by using arms to raise off the seat every hour.

Step-Down Unit

When you are doing well enough, you can leave the ICU and move to the Step-Down Unit for the rest of your stay. The transition out of the ICU means you are improving and moving towards recovery.

Please note: patients will be given preference for private rooms based on their medical condition.

On the Step-Down Unit, our team will continue to help you recover from your surgery, and prepare you and your family to successfully care for yourself after discharge. Your family will be notified by the ICU staff before you are transferred to the Step-Down Unit. When you arrive to the Step-Down Unit, your nurse and patient care technician will meet you. They will orient you and your family to the unit.

What can I expect on the Step-down Unit?

Visitation Policy

Just like the ICU, “Family” members are welcome to visit anytime. Keep in mind that you need to rest and heal. You may not feel up to entertaining a large number of people.

We do encourage “Quiet Time” during the day from 1pm-3pm and 9pm -5am at night. This is a designated time dedicated to promoting your rest and healing. We may ask your family to use the lounge to visit during this time.

How do I regain my independence after surgery?

The staff will provide you and your family with the skills needed to prepare you for discharge. They will encourage you to do as much for yourself as you can. This independence helps you to take control of your recovery. Some people may need more of a guiding hand than others. The nursing staff will be there to assist you and reassure you as needed.

What type of monitoring will I need on the Stepdown Unit?

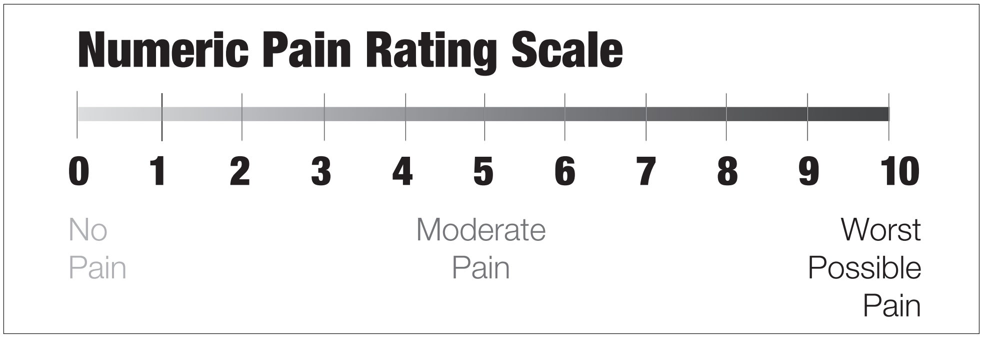
Once you leave the ICU, you will still need continued monitoring. When you arrive on the Step-Down Unit a portable heart monitor, called a telemetry unit, will be attached to your chest. This unit will transmit your heart rate and rhythm to monitors located at your bedside and at the nursing station. This portable monitor allows you to walk in the halls freely.

- The nurses and techs will regularly check your blood pressure, heart rate, and temperature.
- You will have your blood drawn for lab tests and chest x-rays taken if needed.
- We will measure how much you drink and urinate. We will provide a container for you to urinate into for measurement. We will also ask you to keep track of the amount of fluid you drink and report it to your nurse or tech.
- You will be weighed daily.
- A staff member (either a nurse or tech) will enter your room to assess your needs on a regular basis.

How will my pain be controlled on the Stepdown Unit?

Managing your pain after surgery continues to be a priority on the Step-Down Unit. The nurses will monitor your need for pain medication using the 0-to-10 Pain Scale. You should ask for pain medication when you need it. When your pain is well managed, you will be better prepared and able to walk and do your deep breathing exercises.

Zero means no pain. Ten means the worst possible pain.


Numeric Pain Rating Scale

What will my diet be after surgery?

Your food will be low in fat and cholesterol and will not have any added salt or sugar. It may taste different than what you are used to eating at home. It is very important for you to eat to improve the healing process.

Guidelines:
Eat a balanced diet of:

- Carbohydrate-rich foods high in fiber
- A variety of fruits and vegetables
- Low-fat dairy products
- Lean meats
- Protein-rich foods very important for wound healing. Good source of protein includes: fish, eggs, dairy, beans and nuts.

Room service is available 7 days a week from 6:30a.m. to 9:00p.m. Your nurse will bring you a menu so you can choose what you would like to eat. Your nurse will check to see if you ordered food and if help is needed, will assist you.

If you are diabetic or insulin dependent, your nurse will ask you to call them before you eat so they can check your blood sugar. It is fine for your family to bring food from home but it should be low in salt and low to moderate in fat.

Many people experience constipation after surgery due to inactivity and pain medication. Eating a diet rich in fiber, drinking enough fluids, walking the halls and taking a stool softener will help your bowels move. Sometimes a suppository or laxative is needed to help this process along.

Our registered dietitians are food and nutrition experts who are available to discuss heart healthy choices and salt alternatives or reduction. They provide sound, easy-to-follow nutrition advise.
If you are interested in speaking to a dietician, ask your nurse to arrange a visit.

How will I care for myself while in the hospital?

- Wash your hands frequently or use the hand sanitizer/sani-wipes that we provide to assist you. Hand hygiene is very important to decrease the risk of infection.
- Bathe daily with the assistance of a staff or family member.

Your incisions will be observed and cared for each day. They will be kept clean and dry. Your chest incision may be covered with the Operating Room dressing until the day of discharge or post-operative day 7.

- Continue to wear your compression stockings (sometimes referred to as TED hose); these will help with swollen and achy legs. They should be removed at night and when you bathe.

What can I expect on the day of discharge?

All of the staff on the step down unit are here to promote, assist and educate you and your family to prepare you for discharge.

How will I know I am ready for discharge?

- Make sure you have a ride home.
- Ask a family member or friend to arrive at 9:30 a.m. to review final discharge instructions with you and your nurse.
- Your case manager nurse will be in contact with you to explain your final discharge plans.
- Your nurse will review all discharge instructions with you. During this time, ask any questions you may have about your care after discharge.
- Be sure you understand:
  - ☐ Your medications and prescriptions
  - ☐ Incision Care
  - ☐ Activity/Restrictions
  - ☐ Diet
  - ☐ Reasons to call your doctor
  - ☐ Follow up appointment information

Discharge Tips:

Please make sure all items that you brought with you to the hospital are taken home.

Some examples may be:

- ☐ Glasses, dentures and hearing aids.
- ☐ CPAP machine
- ☐ Walker or cane
- ☐ All technology devices and chargers
- ☐ All medication

Required home essentials:

- ☐ Blood Pressure Cuff
- ☐ Doppler
- ☐ Working Thermometer
- ☐ Scale

- At home, you will need to monitor your blood pressure, heart rate, temperature, and weight. Please make sure that you have the proper equipment before you go home.
- A nurse clinical care coordinator will call you the first few days after discharge to see how you are doing. Phone numbers to contact the clinic will be listed on your discharge education sheet.
- If you have a long drive home, it is important to get up and stretch your legs at least once per hour. This helps to prevent blood clots.

A nurse clinical care coordinator will call you the first few days after discharge to see how you are doing. Phone numbers to contact the clinic will be listed on your discharge education sheet.

Notes

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Reviewer: Bethany Lee-Lehner, RN, MSN

Last Revised 01/2022

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