

# Patient Guide

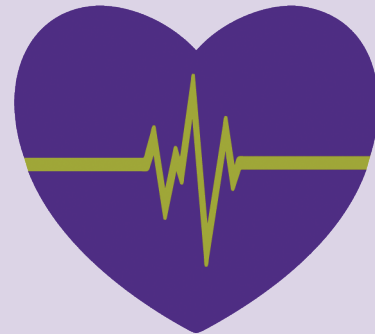
Transcatheter Aortic Valve Replacement (TAVR)

at Silver Cross Hospital



## Dear Patient,

Welcome to Silver Cross Hospital Heart Valve Clinic. We are a multi-disciplinary team dedicated to providing exceptional care for the management of aortic stenosis. Our team of professionals will thoroughly examine your medical history to assess your risk for valve replacement and help educate you on the available treatment options.



In this booklet, you will find information regarding aortic stenosis, including links to educational resources, what to expect during the evaluation process as well as management and treatment options. The booklet also contains a step-by-step guide on what to expect before, during and after the TAVR procedure. Our Valve Clinic Team strives to provide seamless, compassionate and superior care in the management of your heart valve disease. Please feel free to contact our Valve Clinic Coordinator at **(815) 300-2278** with any questions or concerns you may have throughout the evaluation process. We appreciate the opportunity to care for both you and your family during this process.

Sincerely,

Silver Cross Heart Valve Team

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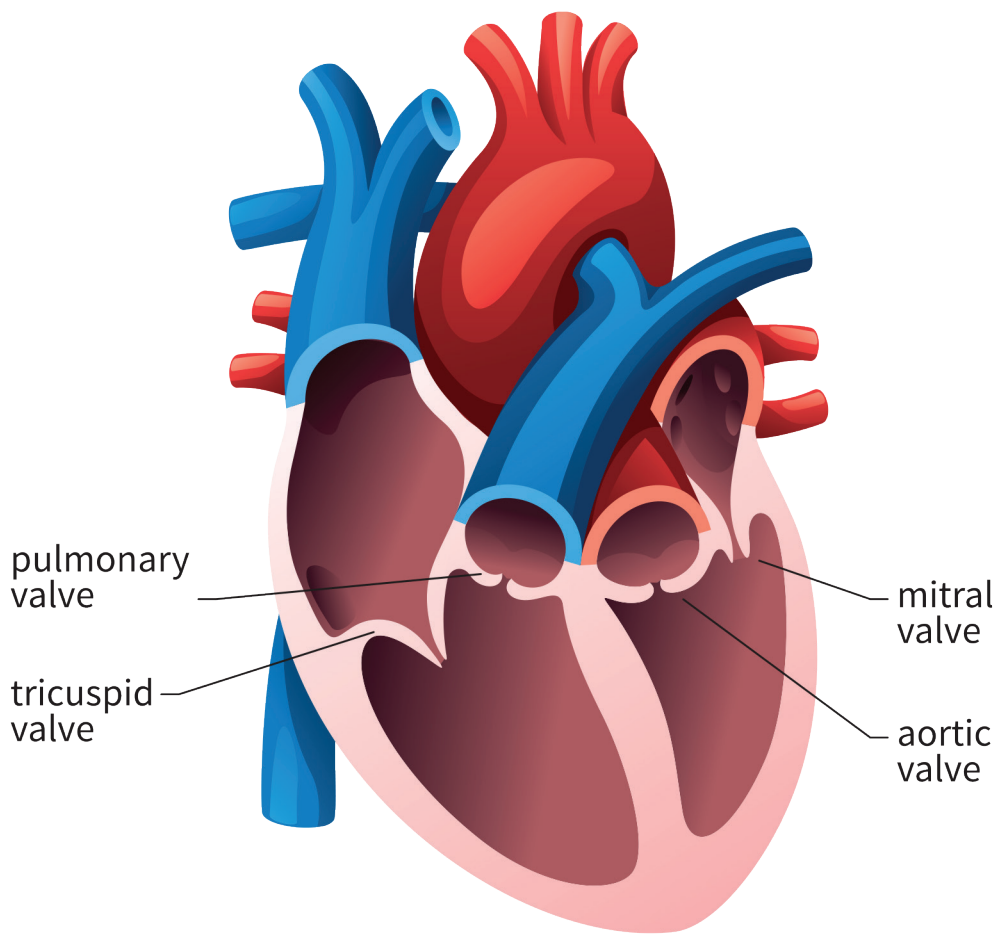
# How Your Heart Works

A healthy heart beats thousands of times per day. The heart's primary function is to pump oxygen-rich blood to your body.

The heart has four chambers: two upper chambers called atria and two lower chambers called ventricles. Blood is pumped through the four chambers with the help of four valves. The valves function as

doorways between the chambers. The valves are made of a thin strong flap of tissue called leaflets.

The valves open in one direction to let blood pass from one chamber to the next, closing quickly between heartbeats so blood does not flow backwards. A one-directional blood flow is important for a healthy heart.

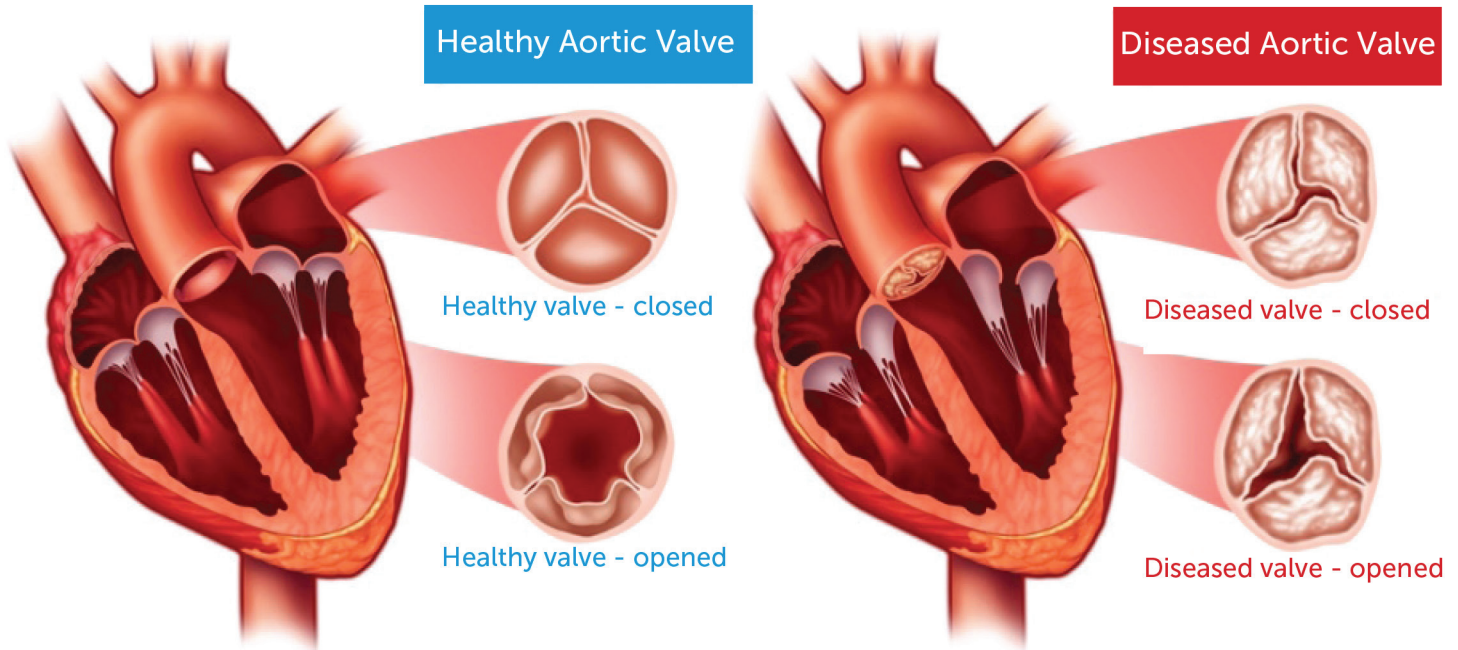


# Aortic Stenosis

The aorta is the main artery that carries blood from the heart to the rest of the body. Blood flows out of the heart and into the aorta through the aortic valve. Aortic stenosis is a narrowing of the aortic valve opening. This narrowing does not allow normal blood flow through the valve. Aortic stenosis can be caused by a birth defect, rheumatic fever, radiation therapy, and most commonly, by a build-up of calcium deposits on the valve

leaflets. Because of the narrowing valve, the heart's left ventricle must work harder to pump blood through the aortic valve to the body. Over time, this weakens the heart muscle and decreases the amount of blood the heart can pump.

Symptoms of aortic stenosis can include chest pain, shortness of breath when exercising, fatigue, palpitations, and fainting.



# What is Transcatheter Aortic Valve Replacement?

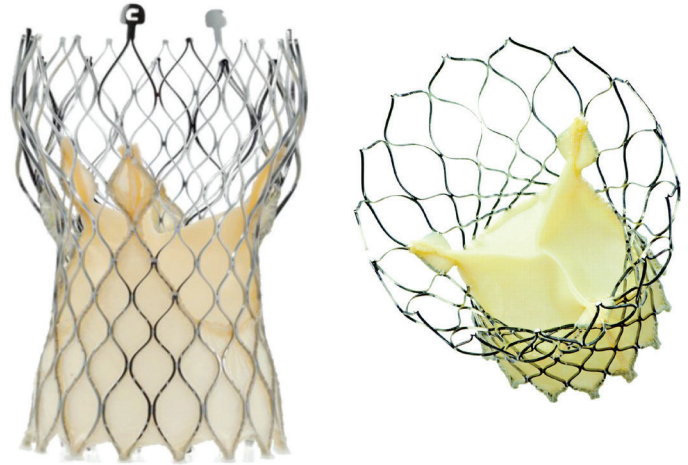
**Transcatheter Aortic Valve Replacement (TAVR)** is a percutaneous (needle puncture of the skin) minimally invasive procedure for patients diagnosed with symptomatic aortic stenosis. In a TAVR procedure, a physician team inserts a new aortic valve within the diseased aortic valve while the heart is still beating. Once the new valve is expanded, it pushes the existing valve leaflets out of the way and the replacement valve's leaflets take over the job of regulating blood flow.

Currently there are two commercially available aortic replacement valves that are used for TAVR procedures at Silver Cross. These include the Medtronic CoreValve™/Evolut™ and the Edwards Sapien™. Our goal is to provide the best treatment option for each individual patient. After careful consideration, your physician team will determine which aortic replacement valve is most appropriate for you.

## Commercially Approved Aortic Valves

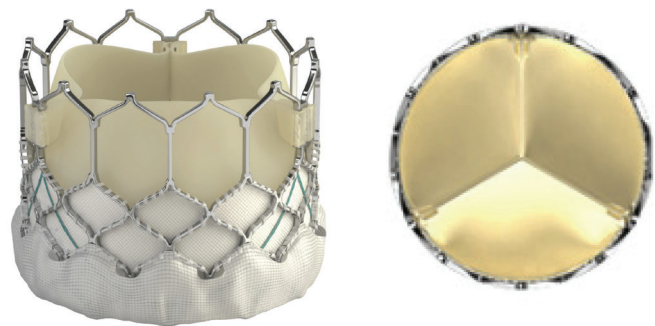
**Medtronic CoreValve™: The CoreValve™ / Evolut™** transcatheter aortic valve is made of natural tissue obtained from pig heart. The leaflets are secured to a flexible, self-expanding nitinol frame for support.

*Image Source: [www.medtronic.com](http://www.medtronic.com)*



**Edwards Sapien™: The Sapien™** transcatheter aortic valve is made of natural tissue obtained from cow heart. The leaflets are secured with a cobalt-chromium frame for support.

*Image Source: [www.Edwards.com](http://www.Edwards.com)*



# TAVR Diagnostic Testing

Prior to the TAVR procedure, you will complete several diagnostic tests to assess your cardiovascular system. This helps your physician team decide on the type of aortic valve replacement and procedure approach that is best for you.

Your heart care team will conduct some of the following diagnostic tests to help determine the best treatment plan for you.

| TEST                           | DESCRIPTION   | PURPOSE   |
|--------------------------------|---|---|
| <b>Cardiac Catheterization</b> | <ul style="list-style-type: none"> <li>• A long thin tube called a catheter is inserted into your leg or arm and threaded through your blood vessels to your heart.</li> <li>• The catheter releases dye which helps the heart and blood vessels show up clearly on an X-ray.</li> <li>• The catheter also collects information about the pressure and blood flow in your heart.</li> </ul> | Detects disease of the heart muscle, valves, or coronary (heart) arteries |
| <b>CT Scan</b>                 | <ul style="list-style-type: none"> <li>• Advanced X-ray test</li> <li>• You will lie on a table and then move into a scanner (a big machine with a hole in middle)</li> <li>• The scanner will take detailed X-ray pictures of your heart &amp; blood vessels</li> </ul>  | Measures the shape and size of your heart and artery system               |
| <b>Carotid Ultrasound</b>      | Uses sound waves to create pictures of the insides of arteries in your neck which carries blood from you heart to your brain.   | Checks for blocked or narrowed arteries                                   |
| <b>Frailty Testing</b>         | Physical tests to assess strength, balance, and mobility  | Checks your overall health & physical well-being                          |
| <b>Pulmonary Function Test</b> | A respiratory therapist will complete pulmonary function test (PFT's)   | Checks overall pulmonary risk for surgery                                 |
| <b>Additional Testing</b>      | Periodic echocardiogram   | Check function of your heart and valve.                                   |

Directions to testing locations and preparation requirements will be provided to you by a member of our structural heart team. **Please note the preparation requirements for each diagnostic test scheduled for you. Not following these instructions could result in a delay, or cancellation of your testing.**

# Procedure Approaches

The new aortic valve in a TAVR procedure can be inserted through a catheter via multiple delivery approaches including transfemoral, transapical, and subclavian. Your physician team will determine which approach is best for you.

## 1. Transfemoral Approach

A needle is inserted at your femoral artery (large artery in your upper leg - groin), and a catheter carrying the replacement valve is guided to your heart. This is the most common approach used for the TAVR procedure. This procedure may be performed under general anesthesia. This approach helps avoid complications from prolonged ventilation and less time spent in the intensive care unit (each patient will be evaluated individually and the team will decide which form of anesthesia is safest for you).

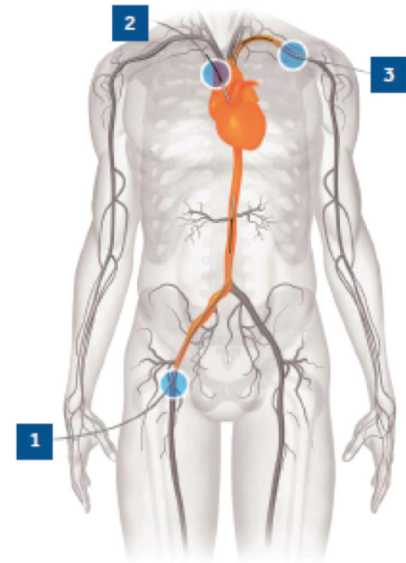
## 2. Transapical Approach

A four-inch incision is made in your chest between your ribs to access the apex (lowest part) of the heart and a catheter carrying the replacement valve is guided to your heart.

## 3. Subclavian Approach

An incision is made in your upper chest just below the collarbone and a catheter carrying the replacement valve is guided to your heart.

If the **transapical** or the **subclavian** approach is used for your procedure, you will receive general anesthesia during the procedure. A tube is inserted in your throat to assist with breathing. The breathing tube is usually removed once the procedure is complete.



Transcatheter Aortic Valve Replacement (TAVR) Approaches



# Pre-TAVR Instructions

## Below is your TAVR pre-procedure checklist.

Please read each item carefully. Failure to follow this checklist may result in delay, rescheduling, or cancellation of your procedure.

- You will need to complete pre-operative labs and a chest X-ray 7-10 days prior to the procedure.
- Do not eat or drink after midnight before the day of your procedure. Do not drink any alcoholic beverages within 24 hours of your procedure.
- Stop taking Coumadin, Warfarin, Pradaxa, Xarelto, and Eliquis **as directed by your physician team.**
- Do not take ACE Inhibitors and Angiotensin Receptor Blockers (ARB) for 24 hours prior to surgery **unless otherwise directed by your physician team.**
- Stop taking Glucophage/Metformin or any medications containing Glucophage/Metformin 24 hours prior to the procedure **unless otherwise directed by your physician team.**
- Take your beta blocker the morning of your procedure **(or take as directed by your physician team).**
- Do not take a diuretic (water pill) the day of your procedure.
- Unless otherwise directed,** it is OK to continue baby aspirin and clopidogrel (Plavix) until the day prior to your procedure.
- Unless otherwise directed,** it is OK to continue Brilinta on the day of your procedure (morning dose).
- If you have an allergy to shellfish, iodine, or contrast dye, please call the office to inform your physician team at least 5 days prior to your procedure.
- If you currently use a walker or cane to assist with ambulation, please bring it with you to the hospital.**



# TAVR Day in the Hospital

You will be admitted to the Interventional Pre-and Post-Recovery area approximately 2 hours prior to your procedure. The nurses there will help prepare you for the procedure and answer any questions you may have.

Your TAVR procedure will be performed in the hybrid operating room. You will be given medication to help you sleep, and you may be on a ventilator to help you breathe. The procedure usually lasts about 2-3 hours. Again this can vary from person to person.

During the procedure, a small hollow tube (catheter) is advanced through an artery in your leg to the heart. Your physician will guide the catheter with the help of a special X-ray machine. Your diseased valve is opened, and a new valve will expand and push the old diseased valve aside.

Occasionally, a small incision is made into the chest or neck to perform the procedure. You will know this ahead of time in most cases.

TAVR procedures can vary in time and in some cases can run longer than expected. We will keep you and your loved ones informed of any delays that may occur. Plan on leaving any valuables at home or with a loved one/caregiver.

While every effort is made to ensure the procedure goes smoothly, occasionally complications arise. In some instances, the procedure has to be converted to open heart requiring heart-lung bypass. If this happens, be assured every preparation is made to handle this situation accordingly.



# After TAVR in the Hospital

Discharge planning begins when you enter the hospital. Because of the less invasive percutaneous approach to your valve replacement, your hospital recovery time will be much shorter than traditional surgical valve replacement. Please prepare your loved one/caregiver for you to return home within 1-3 days following your procedure. Our goal is to get you home and back to your normal routine as quickly as possible.

For the first 12-24 hours, you will recover in the Cardiovascular Unit (CVU) so your heart can be monitored closely. After 24 hours,

your physician team will decide when it is appropriate for you to return home.

Upon discharge, you should not need home care or rehabilitation unless you were receiving these services prior to your procedure. This is a guideline and does not replace clinical judgment. If your care team feels that you are an appropriate candidate for these services, they will notify you.

## Goals: 0-4 Hours

- You will be out of bed and in a chair approximately 4-6 hours after your procedure. You will be up in a chair for all meals once your bedrest time has been completed.
- It is very important that you use your incentive spirometer every hour to help reduce the need for oxygen and to prevent lung infection.

## Goals: 4-12 Hours

- Begin walking 6 hours after your procedure. Please walk with a nurse your first time out of the bed so he/she can assess your vital signs.
- After your first successful walk, please encourage your loved one/caregiver to help you walk as much as possible.

## Goals: Post-Procedure Day 1

- Walk in the hall a minimum of 6 times a day.
- Sit up in a chair for all meals.
- Prepare for discharge.



# After TAVR in the Hospital

## Potential Complications Following the TAVR Procedure

Transcatheter aortic valve replacement (TAVR) carries a risk of complications, which may include:

- **Bleeding**
- **Heart attack**
- **Stroke**
- **Blood vessel complications**
- **Problems with the replacement valve, such as the valve slipping out of place or leaking**
- **Renal dysfunction associated with contrast**
- **Heart rhythm abnormalities (arrhythmias)**
- **Possibility of a slow heartbeat requiring placement of a permanent pacemaker**
- **Emergency surgery**
- **Death**

# At Home after TAVR

## Follow-up Appointments

Valve Clinic: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Location: \_\_\_\_\_

## 30-day follow up with Echocardiogram

Date/Time: \_\_\_\_\_

Location: \_\_\_\_\_

## PCP Appointment

Date/Time: \_\_\_\_\_

Location: \_\_\_\_\_

## Cardiology Appointment

Date/Time: \_\_\_\_\_

Location: \_\_\_\_\_

## Other Provider

Date/Time: \_\_\_\_\_

Location: \_\_\_\_\_

## 1-year follow up with Echocardiogram

Date/Time: \_\_\_\_\_

Location: \_\_\_\_\_

# At Home after TAVR

## Home Care Following Your TAVR Procedure

Complete recovery can take several weeks and depends, in part, on the approach used for your procedure. Below are some general guidelines to follow as you heal.



- **Care for your incision.** It is normal for your incision to be bruised, itchy, or sore while it is healing. Your incision may take a week or more to heal. A surgery site between your ribs will take longer to heal than one in your groin. Care for the bandage and incision as advised by your physician team. **Wash the incision site every day with warm water and soap. Gently pat it dry and do not put powder, lotion, or ointment on the incision until healed.**
- **Shower with care.** Unless your physician team tells you otherwise, you can shower when you get home. Use warm water and a mild soap. Do not scrub or apply pressure to the incision. Pat the site dry with a towel and do not rub. Do not take a bath until your incision is completely healed. Do not submerge your incision in a swimming pool or hot tub until completely healed.
- **Avoid using lotions, powders or ointments on incisions.** This can delay healing or cause infection.
- **Wear loose-fitting clothing** over the incision site until healed.
- **Avoid strenuous activity or exercise for at least 1 week** or as instructed by your physician team. Do not lift anything heavier than 10 pounds and take care not to put strain on your abdominal muscles when coughing, sneezing, or moving your bowels.
- **Walk.** One of the best ways to get stronger after your TAVR procedure is to walk. If your physician team agrees, start with short walks at home. Walk a little more each day. Take someone with you until you feel OK to walk alone.
- **You may resume sexual activity within 7 to 10 days**, unless your physician team instructs you differently.
- **Drive.** You may drive 1 week after your procedure or as directed by your physician team.
- **Take all medications as prescribed by your physician team.** Do not stop taking any medications or start new medications without first checking with your provider.
- **If a heart monitor is ordered, wear it as prescribed.** You may take it off to shower or bathe. A heart monitor can help detect abnormalities in your heart rhythm that can occasionally happen after surgery.
- **Dental Procedures:** Antibiotic prophylaxis is recommended with all dental procedures following your TAVR procedure. Please inform your dentist of your TAVR valve prior to any dental work.
- **Keep a copy of your implant device card with you.** This is mailed to you after surgery. This is important to share if you are going for any diagnostic testing such as an MRI.

## Silver Cross Cardiac Rehabilitation Program

**You will be contacted by a member of Silver Cross Cardiac Rehabilitation team about 2 weeks after you are discharged to setup your outpatient program.**

**Cardiac rehabilitation** is a medically supervised exercise program that helps improve the health and well-being of people who have heart problems. Heart rate and rhythm as well as blood pressures are monitored during exercise. Exercise levels are gradually increased to improve fitness, stamina and heart health. Your cardiac rehabilitation team may include nurses and exercise specialists.

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## When to Seek Medical Attention

**Seek immediate medical help by calling 911 or go to your nearest emergency department if you experience any of the following:**

- Chest pain or trouble breathing
- Sudden numbness or weakness in your face, arms, or legs
- Bowel movement that is dark black or bright red
- Dizziness or fainting
- Increased swelling in your hands, feet, or ankles
- Shortness of breath that doesn't get better when you rest
- Heart rate faster than 120 beats per minute with shortness of breath
- Heart rate lower than 50 beats per minute or a new irregular heart rate

**Notify the Heart Valve Clinic at (815) 300-2278 for the following problems:**

- Chills or fever of 100.4°F (38°C) or higher
- Weight gain of more than 2 pounds in 24 hours or more than 5 pounds in 1 week
- Extreme fatigue
- Redness, swelling, bleeding, warmth, or fluid draining at the incision site

# At Home after TAVR

## Home Monitoring

For 2 weeks following your TAVR procedure, monitor your heart rate, blood pressure, and weight using the Transcatheter Post Procedure Daily Log below. Weigh yourself at the same time each day wearing similar clothing.

## Transcatheter Post Procedure Daily Log

Call (815) 300-2278 if:

- Your temperature is above 100.4°F (38°C) or higher
- You gain 2 to 3 lbs. in a day or 4 to 5 lbs. in a week
- Your incision has any redness, increasing tenderness/pain, or increasing amount of drainage

| Date | Heart Rate | Blood Pressure | Temp | Weight | Incision/Groin Site Inspection |
|------|------------|----------------|------|--------|--------------------------------|
|      |            |                |      |        |                                |
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SILVER CROSS  
HOSPITAL

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The way you *should* be treated.