AT THE FOREFRONT
UChicago Medicine | Center for Care and Discovery

Prep Recovery Orientation and Resource Manual

A guide for the Special Procedures Nurse

UChicago Medicine

OUR MISSION Our mission as part of the University of Chicago, we pursue globally impactful solutions to seemingly unsolvable challenges.
Through our rigorous research, innovative education and comprehensive care and healing, we collaborate on life changing advancements that create meaningful results for our community and the world, including a greater, more equitable future for all.

OUR VISION Together, we elevate the human experience with knowledge and health care.

OUR VALUES

Commit to Excellence:

We contribute our exceptional talents to all we do and empower the same spirit of excellence in others.

Embrace Curiosity:

We stay open to new ideas, champion diverse perspectives, and drive a culture of thoughtful risk taking to deliver transformative in innovation.

Embody Equity:

We identify systemic issues then foster change to drive a more equitable environment inclusive of diverse people, ideas and, fields of science.

Grow Together:

We meaningfully collaborate with one another to create something bigger than we could ever achieve alone.

Make a Difference:

We lead with heart and compassion in all our interactions. We create positive change in our areas of influence whether expanding scientific inquiry, developing the next generation of leaders, or healing our community.

Take Ownership:

We accomplish what we say we will and hold ourselves and one another accountable for our actions.

Chapter 1: Orientation

Resources

Your supervisor, educator, and preceptor are your key resource persons for interpreting UChicago Medicine policies and procedures. If you have any questions about which policy applies to a particular situation, consult any of them for specifics and for help in interpretation. Your progress on the job is one of their most important concerns. You should never hesitate to ask questions or seek advice and guidance from them.

Using your orientation resource manual:

Your orientation manual is a compilation of materials and information covered in your orientation that will help you to develop and practice independently in the department.

This manual contains information about your orientation, such as expectations of you as an orientee, expectations of your preceptor, and finally expectations of you as an independent professional Prep Recovery Special Procedures Nurse once your orientation is complete. This material is designed to help you form a picture of what you need to accomplish during your orientation.

Included in this manual are specific skills and knowledge you are expected to demonstrate during your orientation. The checklists indicate to you and your preceptor what you need to locate, know and use by the end of your orientation. The checklists provide a way for you to assess your skills and knowledge, which is valuable information to share with your preceptor. You can also document your progress through the checklists. For step-by-step checklists of each skill, you and your preceptor may wish to consult the core III and core IV prep recovery skills checklist resource manuals located on the unit. Orientation competencies assess how well you integrate your skills and knowledge in caring for specific patient populations.

This manual also contains description of the most common procedures performed in the departments of Interventional Radiology, GI, CERT, Pulmonary lab, Cardiac Cath lab, as well as CT and MRI procedures where nursing services may be required. You are encouraged to observe as many procedures as you are able during your orientation and even in the immediate period after your orientation as this will enhance your understanding of prep and recovery for each procedure.

Your role during orientation:

The orientation program allows for active participation by the new staff member in planning, implementing, and evaluating his/her orientation. Your responsibilities as an orientee include:

- Identifying your learning needs by using self-evaluation tools.
- Planning your orientation with your preceptor based on an honest evaluation of your learning needs, past experiences, and individual and department priorities.
- Identifying appropriate educational resources and experiences, based on your learning needs and past experiences.
- Establishing a collaborative relationship with your preceptor.
- Identifying and utilizing appropriate resource people during your orientation.
- Providing your preceptor with feedback about the orientation program on a weekly basis.
- Planning meetings with the Nurse Manager and your preceptor on weeks two, four and six to evaluate your progress.
- Reading and understanding policies and procedures.
- Demonstrating an understanding of routine Interventional Radiology, Gastroenterology, Pulmonary, CERT, EP,ECT, ENT and Cath Lab procedures and protocols.
- Demonstrating competency in patient care delivery as indicated by the department orientation competencies and checklists.

- Keeping the Nurse Manager and preceptor advised of whether or not you feel that you are getting what you need from your orientation.

Role of your preceptor during your orientation:

Your preceptor's primary responsibility is to plan an orientation consistent with your learning needs. Your preceptor's responsibilities include:

- Assisting you in realistically identifying your abilities and learning needs.
- Helping you plan your orientation based on your learning needs and past experiences.
- Respecting the confidentiality of opinions and feelings you may express while identifying learning needs and establishing your priorities.
- Helping you establish goals for your orientation.
- Coordinating your department and section experiences.

Role of your preceptor during your orientation continued:

- Providing you with educational resources and experiences.
- Reviewing your progress on a weekly basis.
- Providing a supportive learning climate during your orientation.
- Facilitating your acceptance as a new member of the healthcare team.
- Providing you with constructive feedback about your progress.
- Acting as a role model for clinical practice.
- Meeting with the Nurse Manager and you to discuss your progress.

Uniforms

You are required to wear navy blue scrubs.

Badge Access

Check that your badge allows access to all of the areas on our unit and floor. If you find that you are having trouble with badge access to certain areas, notify your manager by email including the room numbers for which you need access.

Lockers

You will receive a locker and lock with combination for the 7th floor locker room from your Nurse Manager. If you have any questions, concerns, or issues, your Nurse Manager can assist. ALL PERSONAL BELONGINGS MUST REMAIN IN YOUR LOCKER. No belongings are allowed in the Prep Recovery unit.

Lunch

There are 4 refrigerators on the 7th floor in the staff lounge as well as 2 refrigerators on the 5th floor in the break room on the West side. You may leave your lunch in either of these areas. Be sure to label and date any

food items that are not in lunch bags. Be sure to clear out your lunch bag from the refrigerator every time. **The hospital is not responsible if your items are thrown away on designated refrigerator clean-out days.**

Access Checklist for Nurse Managers:

- ☐ Badge
- ☐ Omnicell
- ☐ EPIC
- ☐ API
- ☐ Oracle
- ☐ Glucometer/ HCG
- ☐ Kronos
- ☐ Vocera

Be sure to fill out your Orientation Checklist. Any procedures you are unfamiliar with or do not have the opportunity to experience in the prep or recovery areas can be discussed with your preceptor in order to be signed off.

Your Orientation Checklist will be received from your Nurse Educator.

Additional classes and training to accomplish within 6 months of hire date:

LVAD Class – completed on _____/_____/_____

PALS Certification – completed on _____/_____/_____

Information provided by Nurse Manager:

- ☐ Introductions to the team.
- ☐ Review of initial job assignments and orientation schedule.
- ☐ Review of job description and performance expectations and standards.
- ☐ Review of the job schedule and hours.
- ☐ Review of payroll timing, time cards, and workplace policies and procedures.

Employee Signature_____

Preceptor Signature_____

Preceptor Signature_____

Manager Signature_____

Chapter 2: Unit Information & RN Expectations

Update Nov 2023

Welcome to the Prep/Recovery

It is the goal of the Prep Recovery department to provide high quality care to patients in a safe, thorough, and cost effective manner. Our employee expectations in Prep Recovery are congruent with those of UChicago Medicine: excellence, curiosity, equity, grow together, make a difference, take ownership.

In order to achieve these goals, the following standards are expected from each member of our nursing staff:

- Maintain current licensure as established by the Illinois State Board of Nursing.
- Develop and maintain 100% competency with nursing equipment within the Prep Recovery department.
- Follow established hospital and departmental policies regarding patient care, confidentiality, and privacy.
- Develop and maintain a professional work attitude and atmosphere. Respect each other and work together as a team to promote professionalism and produce consistent high quality patient care.
- Respect all patients, giving total consideration to the patient's personal needs while in your care.
- Maintain housekeeping protocols as established by the department.
- Develop knowledge of pre and post procedures and protocols as established in the departmental procedure manuals.
- Maintain professional appearance in compliance with the UChicago Medicine dress codes and personal appearance policy.
- Be motivated to participate in individual enrichment through continuing education programs.
- Obtain and maintain BLS, ACLS, and PALS certifications.
- Become actively involved in departmental upgrades by suggesting and maintaining improvements, participating in special projects and sharing professional information.
- Following the established HIPPA guidelines to promote patient privacy.

Update Nov 2023

The Role of the Prep Recovery Special Procedures Nurse

Special Procedures RNs working on the 5th floor Prep Recovery area are competent to care for all patients' pre and post procedures in the following departments:

- GI
- CERT
- Pulmonary
- Nephrology
- EP
- ECT
- ENT and Sleep Study
- Interventional Radiology
- Neuro-Interventional Procedures
- Cardiac Cath Lab
- MRI and CT imaging with sedation or anesthesia

The role for the Prep/Recovery RN is a highly specialized role requiring knowledge of each specialty department and the care involved with each procedure. The Prep/Rec RN is responsible for recovery from all levels of sedation and general anesthesia. The Prep/Rec RN is expected to provide critical care and monitoring when the need arises.

The Prep/Rec RN provides specialized monitoring during the recovery phase. The RN may have Charge RN responsibilities for his/her assigned unit. Under the direction of an Attending Physician or a Licensed Independent Practitioner, the Prep/Rec RN provides bedside nursing care and monitoring.

Functions and Responsibilities:

- Follows UChicago Medicine sedation policy to monitor and recovery sedated patients, as well as recovery from general anesthesia.
- Brings excellent organizations skills as demonstrated by: abilities to prioritize and work independently with a high degree of initiative, flexibility, problem-solving, and adaptability to an ever-changing work environment.
- Demonstrates the ability to work under pressure, exercise good judgement, and assume responsibility in a stressful work environment.
- Identifies, presents strategies to overcome, and acts as a change agent to resolve unit and patient care issues.
- Accepts responsibility for learning as part of the development of their own professional practice.

5th Floor

East Prep

The East Prep area provides nursing care to the following service lines: Gastroenterology, Interventional Gastroenterology (aka CERT – Center for Endoscopic Research and Therapeutics), Pulmonology, Nephrology (kidney biopsies), Electrophysiology (EP), Electroconvulsive Therapy (ECT), ENT and Hepatology

(paracentesis). The East Prep area provides services for approximately 50-70 patients in a normal 10-12 hour day.

West Prep

The West Prep area provides nursing care to the following service lines: Interventional Radiology, Interventional Cardiology (Cardiac Cath Lab), as well as radiology procedures that require anesthesia service. The West Prep area provides services for approximately 30-50 patients in a normal 10-12 hour day.

Center Recovery

The Center Recovery area is designed to accept patients from all procedural areas. Patients are recovered from all levels of anesthesia and sedation. The number of patients receiving general anesthesia varies from 25-35 per day. The typical volume in recovery reaches 80-100+ patients per day. The Center Recovery RN to patient ratio is 1:3 with staffing based on ASPAN guidelines for patient classifications and taking into consideration staffing recommendations in a blended care setting.

Daily Expectations and Processes

In the morning, no nurses should be in the Center Recovery area besides the Center Charge RN. All nurses assigned to be in recovery for the day will begin on either the East or West as noted on the daily sheet or where the needs of the unit exist at that time.

The first nurses to either East or West in the morning will be responsible for checking crash carts and glucometer and setting up for patient arrival. If any supplies are needed or issues arise, they will inform the Charge RN who will follow up and take responsibility for these issues.

The Center Charge RN will begin to staff the center area when the first patient is ready for recovery. As the patients arrive in the recovery area, the Charge RN will continue to send for staff members that are helping on the East and West until the Center Recovery area is fully staffed with 9 nurses.

Each Center Recovery RN will be assigned 3 bays, with adjustments made as needed relating to acuity, level of recovery, and monitoring needs. The Recovery RN is required to care for all levels of patients post sedation including: local, minimal sedation, moderate sedation, and general anesthesia.

The patient population ranges from outpatients awaiting discharge to extremely ill patients awaiting ICU beds and receiving 1:1 or 1:2 critical care monitoring. However, the area is designed to operate as a blended care environment, with the majority of the patient population requiring recovery from moderate sedation and a smaller percentage requiring recovery from general anesthesia cases.

Prep Recovery RNs are required to have a minimum of 2 years of critical care experience in an ICU given the acuity of patients seen on the unit. The Prep Recovery RN is not responsible for the management of patients on Mechanical Circulatory Support (i.e. balloon pump), but will be responsible for documenting the necessary recovery items (if not completed by the responsible RN) and assisting the RN who is responsible for the MCS as needed.

End of Day Expectations and Processes

When the Prep areas are finished prepping patients for the day, a minimum of 2 RNs must stay in the prep area until all of the patients have gone into the procedure rooms. The other RNs should report to the

Center Recovery area to assist in the recovery of the remaining patients. The end of day RNs should complete the post calls from the day before and start to close the unit by

- Plugging in all R2 computers
- Ensuring leftover private patient health records are placed in the HIPPA bin
- Putting away all supplies
- Pulling the Kan Ban cards in the supply room
- Filling the blanket warmer
- Cleaning out the nourishment room.
- Empty Leads and pulse oximeter recycyle bin

Late Night Process

Occasionally you may need to stay past 9:30pm. If patients have not finished coming to recovery at 8:30pm, the Center Charge RN will decide on a case-by-case basis (considering staffing, acuity, bed availability, etc.) what patients can be accepted into the recovery area. There may also be patients waiting for inpatient bed assignments past 8:30pm. The expectation on the evening shift staff is that you stay until the last patient leaves and inform evening manager if there is a need to escalate after-hours bed assignment and cleaning, page HOA at 7500 and keep your manager informed if he/she is not on the unit.

RN Documentation

Every page included in patients chart must be labeled using a long sticker with both CSN and MRN included. Documentation and RN task should be complete before lighting N.

Complete the Yellow Communication Sheet with necessary information for Recovery, it patient is a high fall risk Place Fall Risk Sticker here. On the West Side complete the SBAR communication with applicable details.

Using the flowsheet titled Procedural Prep-Recovery; the following items must be documented. Check columns when documenting to ensure correct time. Every patient needs to have this flowsheet filled out to ensure all questions are answered and the proper protocol is followed.

- Patient Belongings (Please chart item specifically and where it is) Encourage family to take more valued belongings. If the patient has more than 10 dollars, they must give it to a family member or call security for a valuables hold and they will issue a receipt.
- Patient bands
- Allergies (Must be documented before orders placed)

- Review Medication list
- Focused questions related to procedure
- Advanced Directives
- Physiological
- Orientation
- Pain/ Vital Signs ALL INPATIENTS MUST BE ON A HEART MONITOR, PULSE OX, BP CUFF WITH MINIMUM 1 HOUR INTERVALS.
- EKG Strip mounted and charted on (in both Pre and recovery) if Anesthesia or abnormality
- Pre Sedation Screening
- Falls Risk Score/ Fall Risk Interventions when applicable
- High Fall Risk Interventions if applicable
- Measurements (Must be documented before orders placed)
- Diabetes (Remember to place order, see nursing protocol order set)
- Aldrete
- Pre Procedural Verification
- Any additional interventions

RN Assessment

Nursing care will be individualized to each patient utilizing the nursing process. All inpatients must be connected to continuous EKG. Outpatients and Inpatients should have a complete assessment based on their procedure. Please refer to specific area. *If there is a concern regarding patient's acuity the RN should consult with the provider regarding a plan of care.*

Patients Receiving Minimal, Moderate Sedation OR Anesthesia should be accompanied by a Responsible Adult. If not present at the time of assessment, the RN must **Verify** that someone will be available before discharge. When verifying rides please encourage arrival to the 7th floor for proper check in process.

All female patients from age **9-56** should have a urine pregnancy test performed. If they refuse a waiver can be signed by patient with date of LMP and TIME filled in, Not APPLICABLE If Dr. Kavitt patient or Anesthesia Patient.

Workflow

- One Nurse can work up one patient.
- Be attentive to any patient or nurse in need.
- If there are no new patients in the area, assist another nurse with the workup of a patient.
- Charge RN can request that any nurse work up a separate patient if there are 2 RN's 1/ patient.
- Refer to Charge RN for any questions, concerns.

Patient Education

- Education provided to the patient and designee should include:
- Sedation Procedure
- Sensations patient may experience
- Plans for monitoring
- Post Recovery Expectations
- Discharge Instructions

Consent

- All fields of the consent must be complete and legible **with date and time.**
- The nurse is responsible for ensuring that the consent is complete prior to the procedure starting.
- The physician/provider is responsible for completing the consent form

Components of the Informed Consent

- ✓ Intended Procedure
- ✓ Risk Benefit and alternatives
- ✓ Planned Medications
- ✓ Intended level of sedation
- ✓ Risk Associated with the Procedure

If the Nurse discovers that the CONSENT form is incomplete or that the patient has not been fully informed the Attending Physician must be notified.

Orders Acknowledgment and Releasing Orders

1. Please acknowledge them if they apply to you by clicking Manage Orders on the left side of the patient's chart.
2. Then click Acknowledge Orders.
3. Select orders to acknowledge by LEFT-clicking the necessary boxes or clicking Release All.

4. Click Release.
5. Sign off your acknowledgement with password.

Lab Order Acknowledgement /Sign Off and Collection

1. Go to Manage Orders on left side of the patient's chart.
2. Click Release Held Orders.
3. Select orders to release.
4. Click Release.
5. Then acknowledge them by following the above steps on order acknowledgement.
6. Go to the Manage Orders on left side of screen.
7. Scroll down to Orders Needing Collection.
8. Click Collection Time.
9. Insert correct date and time of collection.
10. Accept , print lables

Make sure you place patient lab sticker on sample with date/time/signature All of these steps release labs and allows the lab to process them. If one of these steps is not completed, the labs are not in progress.

To Release Future Orders

1. Start at status board and select patient by double clicking on name.
2. Go to the Manage Orders on the left side of the screen.
3. Click the Order Review Tab on the top of the patient screen.
4. Click Go To Order Review.
5. Click Views.
6. Select Future/Standing.
7. Select desired order.
8. Click Release.
9. Follow above steps 6-12 on Lab Order Acknowledgement and Sign Off.

Nursing Protocols

When performing these tasks, place a nursing protocol order, (order set # 3620)

- POCT Glucose
- POCT Pregnancy
- Isolation
- Pacemaker Interrogation
- Placing IV
- Discharge

BEAKER Lab Collection Process

Zebra printer is Needed for this Process.

1. Open Medicopia (top application on left side of screen)Once clicked it should automatically log you in ((if not put in your username and password).
2. Select Printer from drop down: Zebra CPCL Bluetooth Printer→Association: this will ask you to scan the printer barcode(located on the side of the printer) if scanner or scanning does not work type in barcode letters (Caps) and numbers ex: XXJQ1234567
3. Press ok
4. Scan patients barcode with the CSN and MRN displayed (may have to scan twice), if not populating select procedure area where patient is located, or where they transferred from (list will be on screen, after you sign in) , if scanner is broken you can type in the MRN number in the box: MHID.
5. Select labs to print
6. Select how blood is drawn (ex.peripheral)
7. PRINT→ labels will print from scanned printer

ABO Collection Process

When Providers place a Type & Screen order, Epic will look back at the patient's historical information to verify at least one blood type result is on file to fulfill pre-transfusion testing requirements. If not, Providers will link a second order, ABO Verification, to the original Type & Screen.

Therefore, you will need to acknowledge two orders if the ABO Verification order was linked. Collect the ABO Verification and Type & Screen samples from separate sticks, at least one minute apart. Release the orders separately to avoid the same collection time on sample stickers.

1. From the RN Orders Overview Report, find the Type & Screen order and the ABO Verification order and acknowledge them.

2. Release the Type & Screen order, but not the ABO Verification order. Collect the Type & Screen as usual. Use the pink top for the Type & Screen.

3. Ensure at least one minute has passed, and then release the ABO Verification order. Collect the sample using a separate needle stick. Use the Tan Top for the ABO Collection, stocked in the Clean Supply.

Guidelines for NPO Status Policy # PC119

Patient must be appropriately NPO (Nothing by mouth) prior to a non-emergency procedure requiring moderate or deep sedation of anesthesia care by an anesthesiologist according to the following schedule:

8 hours prior: Stop full meals (full fat and protein e.g. hamburger)
6 hours prior: Stop light meals(e.g. toast, cereal), milk and formula (may continue clear Liquids)
4 hours: Stop breast milk (may continue clear liquids)
2 hours prior: Stop clear liquids (discontinue all oral intake)

Chapter 3: Charting

Update Nov 2023

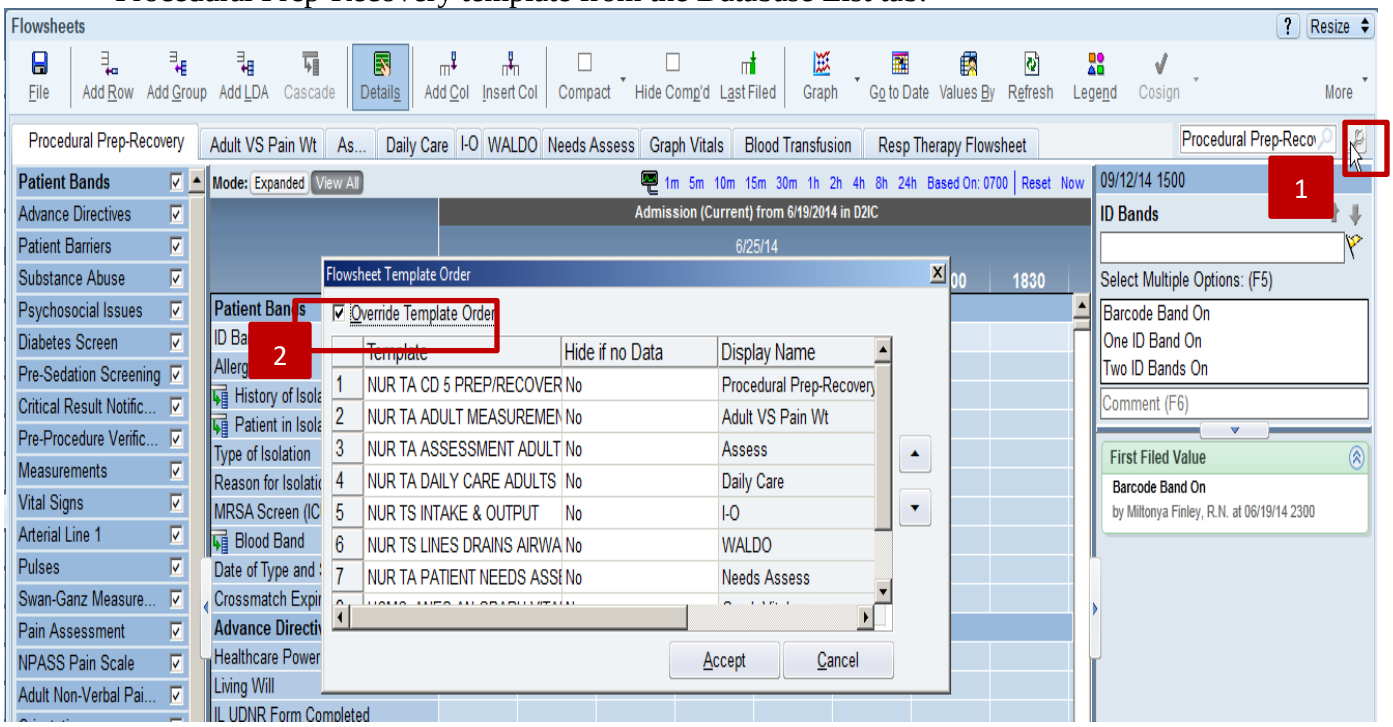
Opening Epic

The CD5 Pre/Recovery Status Board is required to open a patient's chart. Open EPIC through UCMC Applications. For Department enter #500041 CD5 Prep/ Recovery/Central→press ok→Actions tab (circles with 3 dots inside top far right)→ from dropdown Menu select Settings→ Select CD5 Prep/ Recovery→Run

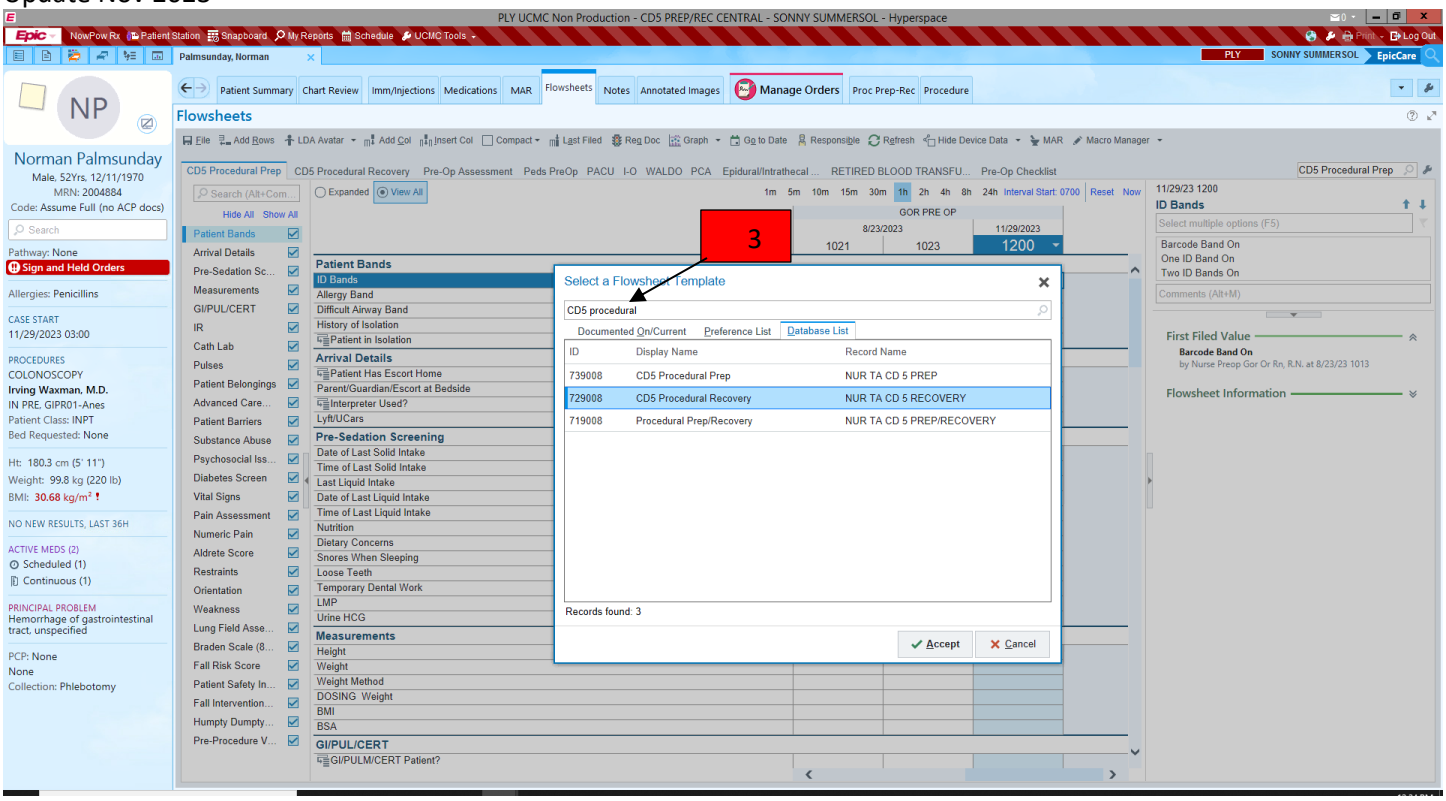
PROCEDURAL PREP-RECOVERY FLOWSHEET

In order to wrench in this flowsheet, follow the instructions below:

1. In the **Doc Flowsheet** activity, click the **Wrench** icon (right side of screen).
2. The Flowsheet Template Order window opens. Select the **Override Template Order** checkbox. This allows you to add a new flowsheet.
3. Click inside the blank field where you want to add this template. Then, click the magnifying glass. Type in CD5 Procedural Prep (739008) and/or CD5 Procedural Recovery (729008) choose the Procedural Prep-Recovery template from the Database List tab.



Update Nov 2023



ALDRETE

The Aldrete Score serves as a guide to establish a baseline and assess how well the patient is recovering from sedation. The Aldrete Score should be recorded on every patient upon admission into the prep area. It is important to accurately chart the Aldrete Score in the prep area as this will be considered the patient's baseline score for the duration of their stay.

Parameter	Description of Patient	Score
Activity Level	- Moves all extremities - Moves 2 extremities - No Movement to Command	- 2 - 1 - 0
Respirations	- Able to Deep Breathe and Cough Freely - Shallow, Airway Adjunct, Dyspnea - Apnea or Obstructed	- 2 - 1 - 0
Circulation	- BP +/- 20% of Pre-Anesthesia Levels - BP +/- 20-50% of Pre-Anesthesia Levels - BP +/- 50% of Pre-Anesthesia Levels	- 2 - 1 - 0
Consciousness	- Awake and Alert - Arousable on Calling - Not Responding	- 2 - 1 - 0
Oxygen Saturation	- SpO2 > 92% on Room Air - Supplemental O2 Required to Maintain SpO2 > 92% - SpO2 < 92% with O2 Supplementation	- 2 - 1 - 0
Total Score	**Maximum score of 10; score of 9 or within 1 of baseline is required for discharge.**	

Aldrete: Post procedure score less than 9 (not baseline) at 1 hour requires further assessment and monitoring. Monitoring is required every 5 minutes until Aldrete is back to baseline or "9".

CANDLER

CANDLER is an acronym used to highlight what parts of the prep process have been completed and when the patient is ready to go into the procedure room. CANDLER shows up next to the patient's name on the status board as each letter is "lit." Both prep and procedural areas can view the CANDLER status of their patients on the status boards from their respective areas. Each letter should only be "lit" when the task has been completed.

Once the CANDLER is completed, the procedural team will know the patient is completely ready for the procedure and they will come to retrieve the patient. Be sure to complete all required parts prior to lighting the letters.

C- consent	Fields that "light" or activate the C	- Surgery Site/Laterality Marked by Surgeon or Proceduralist - Consent Form Signed, Completed, & Present	- Must be marked as "YES" and/or "Blue Band Placed" on West Side for applicable procedures. Mark "N/A" on East Side for GI procedures without laterality or site. - Must be marked "YES" to light CANDLER.
A- *anesthesia*	*Fields that "light" or activate the A*	***This is documented by Anesthesia Only.*** *If the patient is not receiving Anesthesia support, the A will be red.*	
N- nursing	Fields that "light" or activate the N	- Nursing Assessment Completed - Pre-Procedure Pt. Documentation Complete	- Both are Yes/No answers
D- documentation	Fields that "light" or activate the D	- Valid H&P Present - Physician Assessment Complete	- H&P must be updated within 24 hours of procedure in order to proceed. - Yes/No
L- labs	Fields that "light" or activate the L	- Procedural Labs Verified - Devices/Implants/Special Equipment Available	- Yes/No/NA - Yes/No/NA

			- **CANNOT PUT N/A FOR IR PATIENTS**
E- education	Fields that "light" or activate the E	- Pre-Procedure Education Complete	- Should be Yes for everyone (no matter if inpatient or outpatient)
R- *room ready*	*Fields that "light" or activate the R*	**Do not light this**	***This is documented by the Procedure Room Staff only.***

Chapter 4: East Prep Guidelines

GI/PULM/CERT

Accessing the Status Board

To open the GI Status Board click on CD5 ALL (already pre set on the status board). Each Room list patients in the order of their scheduled procedure time.

CD5 Pre/Post

This Status Board Includes the Entire 5th Floor Procedures

To Assess CD5 Pre/Post: Go to Status Board→Actions tab(Circle with 3 dots inside on the top right corner)→ Select Settings from the drop down Menu→Select CD 5 Prep/ Recovery SB→ Run

East Patient Process

1. Patient arrives on 7th floor and checks in at the grey desk. PSC on 7th floor changes patient status to "In Waiting."

2. East Charge RN assigns patient to bay and either PSC or Charge RN calls 5th floor PSC desk to request patient be escorted to East Prep. Patient status changed to "Sent For" by either East PSC or Charge RN.

3. Patient takes elevator to 5th floor waiting area and is escorted by 5th floor PSC to assigned East bay.

4. Upon arrival to assigned bay, Charge RN or PSC changes patient status to "In Pre."

5. East RN begins prep process.

East Prep Workflow

- Confirm name, DOB, allergies, procedure, isolation status, and ride home.
- Review PO status and prep taken (if necessary).
- Complete Procedural Prep Recovery flowsheet.
- Fill out yellow prep/rec communication form and label with patient sticker.
- Patient's personal valuables placed in a locker with other belongings placed under the cart. (Document appropriately).
- ALL undergarments are removed and placed underneath the cart, not behind the bed.
- ID band, allergy band, fall risk band, difficult airway band – placed on patient as needed.
- Labs drawn if necessary.
- IV placed (non-antecubital):

a. 24# to 20# with 500ml NS at KVO if moderate sedation

b. 20# with 1L NS at KVO if GI/Bronch with Anesthesia

c. 22# saline lock Kidney Biopsies (Native) and Transplant kidney biopsy – NO IV needed)

d. 20# with NS KVO Paracentesis

e. 20# with 1L LR at KVO if CERT

f. 20# with 1L LR bolus if CERT –* see CPN Procedure in Ch.4

- If within childbearing age **9-56** and moderate sedation, either sign waiver or give urine sample for pregnancy test, EXCEPT FOR DR. KAVIT PATIENTS MUST HAVE URINE HCG PERFORMED.
- If within childbearing age and Anesthesia patient, MUST give urine sample for pregnancy test.
- Go over discharge instructions with patient and family – signature by patient and RN.
- Review home medications.
- Light N when all nursing care and assessments are complete.
- Check to see if MD has done H&P (History and Physical) to light D
- Check to see if MD has complete the consent to light C, make sure consent follows guideline (See consent)

RN Assessment

Patients having a Pulmonary Procedure should have lung sounds accessed, patients having a colonoscopy should have abdomen accessed, patients having a paracentesis access for abdominal distention, patient having a CERT procedure should be evaluated for pain prior to procedure. If anesthesia patient, EGD or Bronch procedure; remove dentures.

Pacemaker patients

1. If the patient has a pacemaker, it is the responsibility of the nurse working the patient up to page the pacemaker nurse if necessary.

2. First, check the chart to see if the patient's pacemaker has been recently interrogated. From the patient's chart, go to Chart Review, Notes, click Filter and check Cardiology box, and then see if any Device Clinic notes are visible. Print the note and speak with the Anesthesiologist or GI MD to ensure the note is adequate.

3. If the note is not adequate, or you cannot find a note, it is best to page the device interrogation RN through the computer paging system at 4118. The page should include the patients name, need for interrogation, their MRN #, device type if known, location, callback number of 68393 (the desk number) with your name.

Example page: John Doe MRN 123456, Rm E4. Needs pacemaker interrogation for colonoscopy. Medtronic. Thanks, Jane, RN 68393

RN Documentation

All items listed in "Workflow" should be charted, plus any additional interventions. WALDO IV. Chart notes for any change in patient status, or for any additional care or treatment needed.

Charting Delays

If you expect a delay in patient care, please notify the Charge Nurse immediately. Difficult IV sticks, awaiting MD, Labs, Ride Verifications all need to charted as delays. From the Status Board click on the Actions tab (circle with the 3 dots inside far right of screen)→ from the drop down menu select Delays→Fill in Delay Type (where the patient is), delay reason (examples given above), and free type extra comments as necessary.

Update Nov 2023

Printing Instructions for GI/Pulm/CERT (Nephrology and Hepatology)

To Print Requisitions

1. Know patient name, physician name, time of procedure, and procedure room prior to beginning.
2. Click *Snapboard* on top of EPIC main screen.
3. Choose GI/PUL/CERT.
4. Ensure date is correct.
5. Scroll until you find procedure appropriate procedure room and time slot.
6. Patient name will appear when you hover over slot.
7. Right click slot (The name of the physician performing the procedure will be present).
8. Click *Expand* – the requisition should then pop up.
9. Click the Print icon located on the left side of the pop up screen.
10. Click the *Print* button when the screen pops up.

To Print Patient Labels

1. Start at main screen and select patient by left- clicking once on name.
2. Click *Actions* in upper right hand of screen.
3. Click *Open Case.*
4. Click *Print* (located next to Log Out in uppermost right corner of screen).
5. Click Print Labels.
6. Choose number of pages needed (normally 3 pages).
7. Click *Accept.*

To Assign a Patient to a Bay

1. Start at main screen and select patient by RIGHT-clicking once on patient name.
2. Click *Assign.*
3. Highlight CORRECT bed number (note whether E, C, or W).
4. Left click.
5. Check to make sure patient moved to correct bay.

To Change a Patient Status

1. Start at main screen and select patient by RIGHT-clicking once on name.
2. Click *Procedural Events.*
3. Click on desired Action i.e. Sent For, In Pre, In Post, Discharged.
4. If that does not work (some people may not be able to do this) do steps 1-3.
5. Then click *All Events.*
6. Scroll to desired action and enter time of status change.
7. Click *Accept.*

East Procedures

GI Procedures

Colonoscopy

- IV's should be placed on the RIGHT ONLY (NO AC). BP cuff placed on the left arm only for ALL Colonoscopy procedures *except where Limb Restriction

Manometry/ Motility

- These patients don't have to get undressed; they need a complete set of vitals, medication list reviewed, PO status (check for certain foods they were supposed to avoid)

Capsules

- This procedure is done at bedside; these patients don't need to get undressed. Complete set of vitals, and review medication list. If inpatient report must given for CLEAR instructions of patient's diet.

Pulmonary Procedures

Bronchoscopy

- If the bronch patient is receiving anesthesia, they most likely will not need a lidocaine nebulizer pre procedure.
- If the patient is not receiving anesthesia please check for a lido neb by following the above instructions to acknowledge orders.
- If there is not an order, please page the primary or fellow to confirm if a treatment is needed or not. Most of Dr Hogarth's patients require nebs. Most of Dr. Murgu's and Wagh's patients do not require nebs.
- **Please double check the needs for a neb for all pulmonary patients**. Check with your charge nurse if there are delays in the back. The treatments are ***most effective*** if done right before going back.
- All bronchoscopy patients should get a 1L 0.9NS IV bag.

Pleurex Drain

- All cases, even those without sedation require a PIV in case of emergency 22# or better.

Flexible Laryngoscopy with Laser Ablation/ Dr Gao

- Patient does not need to get undressed; we give them a gown to put over their clothing.
- Will need ENT prep tray and medications at bedside in prep
- Patient does not need a ride verified
- Patient does not need an IV as there is no sedation. May eat a light breakfast.
- Patient will need one set of vitals, ID band
- Patient will need the intake questions including medications, allergies reviewed.
- Post procedure- NPO for 1&1/2 hours post and voice rest.

- Chart preparation should include: order form, general surgery consent prep communication form, procedure specific discharge instructions, and labels.

DISE Procedure - Drug Induced Sleep Endoscopy/ Dr Losavio

- All patient anesthesia workup, 20G IV, Ride home verification, OK to take anticoagulation meds

Zephyr

- Will be admitted post procedure
- IV and anesthesia workup
- May need neb, check with service
- Will have emergency cart to travel with them post procedure

Thoracentesis- No IV needed, local anesthetic
Pleurx Removal- No IV needed

CERT PROCEDURES

- All patients anesthesia workup, IV # 20G, 1 litre LR, ride verification , APN will enter prep orders, may need labs

CPN

- Patients are hydrated with 500-1000 ML NS PRIOR TO PROCEDURE

Nephrology Procedures

Kidney Biopsy Patients

- Transplant cases do not need a ride home.
- Native Kidney biopsy need IV saline lock, ride home, 4 hour recovery
- Transplant kidney biopsy no IV or ride home verification needed
- Check labs (HgB, Plt, PT/INR, Creat and inform the MD if any results are outside of the normal range.
- Patients should be NPO after midnight if Native KB
- Check blood glucose if diabetic. (Should already be in order set).

Regarding Anticoagulation:

- ASA and NSAIDS should be held a full week before the biopsy
- Coumadin/ Wafarin should be held for 5 full days before biopsy
- Direct acting anticoagulants (rivaroxaban/ Xarelto, apixaban/ Eliquis, dabigatran/Pradaxa, edoxaban/Savaysa) should be held for 3 days before the biopsy
- Plavix (clopidogrel) should be held for 5 full days for biopsy.
- If there are any questions please page the MD.
- There are different discharge instructions for TRANSPLANT vs. NATIVE
- MD will come bedside to consent and complete H&P

Hepatology Procedures

Paracentesis

- These patients get undressed from the waist up
- Patent IV 20# for albumin absorption

Other Procedures:

ECT- Electroconvulsive Therapy: NPO, IV, anesthesia workup, no dentures, ride home verification, Consent good for one month

Electrophysiology- Cardioversion, TEE, remove contact lenses, NPO, IV, anesthesia workup, ride home verification, verify rhythm with strip, may need 12 lead EKG

ENT/ Sleep study: All patient anesthesia workup, 20G IV, Ride home verification, OK to take anticoagulation meds,

Procedure Service: liver rooms- No sedation, No IV needed,

PICC line insertion- CxR post procedure

Paracentesis- long drain times

Thoracentesis- CxR post procedure, must be checked by radiologist before discharge

Lumbar puncture- one hour flat recovery

Chapter 5 : West Prep Guidelines

INTERVENTIONAL RADIOLOGY/ CATH LAB

Accessing the Status Board for IR

From the CD5 Pre/ Recovery Status Board, open another board (CD5 6 Pre/Post) click on the circle with the three dots inside, from the drop down Menu select settings, on the far left 9 Available Settings, select CD5 Interventional Radiology All Patients SB.

West Patient Process

1. Patient arrives on 7th floor and checks in at the grey desk. PSC on 7th floor changes patient status to "Arrived."
2. West Charge RN assigns patient to bay and PSC calls patient to report to 5th floor waiting area. Patient status changed to "Sent For" by either West PSC or Charge RN.
3. Patient takes elevator to 5th floor waiting area and is escorted by PSC to assigned West bay.
4. Upon arrival to assigned bay, Charge RN or PSC changes patient status to "In Pre."
5. West RN begins prep process.

West Patient Workflow

- Confirm name, DOB, allergies, procedure, isolation status, and ride home.
- Review PO status and any pre-medication, if necessary.
- Complete Procedural Prep Recovery flowsheet.
- Fill out yellow prep/rec communication form and label with patient sticker.
- Patient's personal valuables placed in a locker with other belongings placed under the cart. (Document appropriately).
- ALL undergarments are removed.
- ID band, allergy band, blue band, fall risk band, difficult airway band – placed on patient as needed.
- Check lab results and perform lab draw (or EKG for Cath Lab if needed).
- IV placed

a. 22# KVO with 500ml NS if for moderate sedation (unless bigger bore needed, See Procedures)
b. 20# KVO with 1Liter NS if Anesthesia
c. Saline lock IV for Cath Lab patients (Ensure to place primed fluids at bedside)

- <u>If within childbearing age **9-56**, either sign waiver or give urine sample for pregnancy test. Fill in time on pregnancy waiver.</u>
- Go over discharge instructions with patient and family – signature by patient and RN.
- Review home medications.
- If order placed; pull antibiotics and/or give Ativan if necessary.
- Light N when all is nursing care and assessments are complete.
- DO NOT light the C and D if the patient does not have* antibiotics and any *meds pending, *labs pending, or *blood products needed.

Update Nov 2023

Charting Delays for IR

If there is an expected delay please notify the charge nurse immediately. PO Status, Iodine Allergy, Ride Verification, Difficult IV Stick, just to name a few. From the Status Board click on Actions tab(dot with 3 circles inside, top right of screen) →from the drop down menu select Delays Fill in delay type (where the patient is), delay reason (examples given above), and free type extra comments as necessary.

To Print Labels through Front Desk

1. Open the *Front Desk*.
2. Select the correct patient by left-clicking once on the patient's name.
3. Click *Visit Label*.
4. Ensure printer selected is *CD-05230 A- Labels*.
5. Choose amount of labels needed.
6. Click *Print*.

To Print a Requisition through the Front Desk

1. Open the *Front Desk*.
2. Select patient by left clicking once on the patient's name.
3. Click *Expand*.
4. Use the print icon to print the patient's requisition.

Checking in an IR Patient (INPATIENTS ONLY)

Open the Front Desk (In order to get to screen that allows you to perform this action)

1. Click on *Epic* in the top left hand corner.
2. Hover over *Radiology*.
3. Click *Front Desk*.
4. Click in the bottom section that says *Reports*.
5. Click *Settings*.
6. Choose *IR CD*.
7. Click *Run*.
8. You can make the reports section larger by hovering over the line between the top and bottom sections until you see arrows.
9. Left click and hold it down while dragging the line upwards.

*This will then be saved as your default setting***.**

Update Nov 2023

To <u>Check In</u> a Patient

1. Open the Front Desk.
2. Select the correct patient by left-clicking once on the patient's name.
3. Click *<u>Check In</u>*.
4. There may be a pop-up – just click ok or submit.

Note: <u>The CANDLE will not light up for a patient who is not checked in.</u>
<u>Also, once checked in the patient may or may not drop to the bottom of the status board requiring you to assign the patient to a West bay again. This will also change the patient's color to the light blue that states *Arrived*.</u>
<u>Outpatients will be checked in by the 7th floor. Inpatients will be checked in by the West PSC. When the PSC is gone, the nurse will need to check in the patient.</u>

Changing the Patients Status

From the CCD IR board or CD5 Prep/Recovery Board right click on the patient and select desired outcome (*pre, ready for discharge, discharged*). Once patient is discharged, update patient's location to home or floor. Click on the Action tab (circle with the 3 dots inside far top right)→ choose Update Patient Location from drop down Menu →Under LOCATION; choose appropriate disposition (you can free type home or floor)

How to Discharge an IR patient

1. Right click on patient's name
2. Select Discharge from Menu (this will grey out patient's name)
   To remove them from the Status Board
3. Go to Actions Tab (circle with 3 dots inside top right corner) Select Update Patients Location
4. Enter patient's disposition (Home or Floor)

RN Assessment

When assessing an IR patient make sure to check the 5 C's

- ✓ **C**oags, **C**reatinine, **C**ontrast Allergy, **C**onsent and **C**uisine
  Coags need to be completed within 30 days, if allergic to iodine must be previously pre medicated.
  Notify APN immediately if any problems arise with the 5 C' before continuing workup.
- ✓ Pregnancy waiver signed age **9-56**
- ✓ Potassium order for Anesthesia Patients only

RN Documentation

Any meds given, document. Focused assessment charted. Allergies, Med list, Belongings, Fall Risk, Waldo IV. Waldo Drain, DO NOT LIGHT C, D, L, without necessary items present. DO NOT LIGHT N UNTIL COMPLETE.

IR PROCEDURES

*****If Known Place PIV on OPPOSITE EXTREMITY of procedure***

Fistulagram/Declot/Angioplasty place ID Band must be on extremity

- Nothing including pulse ox on affected extremity

SVC/ IVC Cavagram

- Verify labs
- No ABX
- PIV

Transjugular Liver Biopsy

- Verify labs, Needs IV , check for contrast allergy

Peripheral Angiogram/ Embolization

- Check pulses, Needs IV

Port Placement

- Verify labs, Needs IV ,
- No contrast

Port Removal

- Verify labs
- No antibiotics

Tunnel/Non- Tunnel Placement

- Verify labs
- IV
- No contrast

Tunnel/Non-Tunnel Catheter Removal

- Verify coags
- Get Line Cart from Clean Supply
- LIDOCAINE 1% from Omnicell
- Patient should have on cardiac monitor, b/p Q 15 minute intervals, pulse ox DURING and after removal
- Associate patients vitals
- No IV or antibiotics

Discharging Line Removals

- Discharge (usually 30 minutes after removal; NP/ Provider will verify time)

- Document site, vs Q 15 min for a minimum of 2 if no bleeding, if bleeding notify provider/ NP
- Waldo line out as removed
- If out patient - needs AVS, if inpatient- give report and place transportation
- Discharge patient (See how to discharge IR patient)

Site Check

- Site should be accessible for NP/ provider for assessment
- One set of VS
- Medication Review

<u>New Placement</u> G-Tube placement/ biliary drain/ nephtube NEW PLACEMENT

- Verify coags
- PIV
- Antibiotics
- Patient will be admitted

<u>Routine</u> Check and Change G- Tube/biliary/nephtube

- PIV
- Antibiotics

Adrenal Venogram (Adrenal Venous Sampling)

- 2 PIV (AC) **(try and insert opposite extremities)**
- Verify Contrast Dye Allergy
- Cosynotropin (to be started 30 min. before start of procedure/ call pharmacy as soon as pt. arrives)
- Labs (BMP/CBC/ PT/INR); *potassium level is important*

Venogram for Mapping

- IV as low as possible in the extremity being assessed. NO Sedation given

LP

- Verify Coags
- PIV in case of Emergency if done in IR, for GMI no IV needed

Blood patch

- 18G, no smaller than a #20G **AC , IV must have blood return.**

Myelogram

- Verify Coags, Verify BMP

- Verify for IV dye allergy
- PIV

Uterine Fibroid Embolization (UFE)

- Labs (BMP/HCG) * NOT ABLE TO SIGN WAIVER
- Pulses
- Clindamycin , (Readiness), consult with charge nurse)
- TBA possible PCA in recovery / May be discharged depending on pain control

Chemo Embolization (TACE/TARE)

- Labs (CBC/BMP/PT/INR)
- PIV 20G @ least on LEFT
- PULSES (MARK/DOCUMENT)
- Secretary to take sheet for chemo if TACE
- Antibiotic's
- 2 liters IVF bag:
    - 1st liter is 250 ml/hr for 4 hours
    - 2nd liter is 150 ml/hr for 7 hours

TheraSphere (2 sessions MAPPING/TREATMENT)

- Check Iodine/dye allergy
- Labs (CMP/CBC/LDH/AFP/PTT/PT/INR) ***Within 15 days***
- SERUM pregnancy test (for **9-56** y.o.)
- PULSES (MARK/Document)
- Review meds/ Make sure not on Metformin (hold for 48 hours prior to procedure)
- 10mg Zofran, 10mg Decadron, Antibiotic's
- 2 liters IVF bag:
    - 1st liter 250 ml/hr
    - 2nd liter 150 ml/hr

Thrombolysis

- Verify Coags

Pulmonary AVM

- IVF need filter (located in clean supply)

ANTIBIOTICS For IR Procedures

- Ancef (arms up) vs. Cefoxitine (waist down)

- If over 60kg pt. will receive 2 grams
- PCN allergies receive Vancomycin

INPATIENTS: Check MAR for antibiotics, if patient is scheduled to receive them within the timeframe of their procedure, please call the floor nurse to receive medication. Tube Station 208

If more than one antibiotic is ordered, it is the expectation that the nurse starts one in prep.

*VANCOMYCIN MUST RUN ON A PUMP

CATH LAB

Assessing the Status Board for Cath Lab Patients

From the Status Board→ Actions tab (circle with 3 dots inside top right corner → Select Settings from the Menu →Select CD5 Cath Lab Suite SB→Run

Charting Delays for Cath Lab

If there are any expected delays, please inform the charge nurse immediately.

To chart a delay (difficult stick, waiting for MD, waiting to verify ride, labs) Go to Action Tab (circle with 3 dots inside, top right corner)→from drop down Menu Select Delays→Fill in delay type (where the patient is), delay reason (examples given above), and free type extra comments as necessary.

Printing Instructions for Cath Lab

Go to Snap Board (top of Status Board)→ Go to the Actions Tab (circle with 3 dots inside top right corner)→ From dropdown Menu Select Snapboard Settings→ Select Cath Lab→ Select Adult Cath Lab (make sure you visualize Cath Lab Rooms 1-3)→ Select Run→Go to Appropriate Room patient is scheduled for→Right click on patient→Select Expand--> Select Print

How to change the Status of a Cath Lab Patient

From the Cath Lab Status Board→right click on patient select desired action (Pre, Ready for Discharge)→If patient discharged complete step 2. (see discharge process for cath lab)

RN Assessment

From the Cath Lab Status Board, Orders and Prep Instructions will be written please make sure to check orders.

- ✓ Labs and EKG orders need to be verified even if not ordered. If labs needed must be drawn in prep. Please call Cath lab charge nurse if your patient does not have labs or EKG done within 30 days and there are no orders.
- ✓ Check for Iodine Allergy If a procedure with dye.
- ✓ Pregnancy test or waiver age 9-56 (not applicable for anesthesia patients)

RN Documentation

Pulses, site marked and charted when applicable

CATH LAB PROCEDURES

RHC w/ biopsy

- PIV only if receiving sedation
- If IV saline lock, Prime Fluids and attach to cart.

LHC/ Angiogram

- PIV (20G **or 22G) NOT ON THE WRIST saline lock; Ensure IV is patent and saline lock; prime fluids and attach to cart.**
- Allergy: verify contrast (dye) allergy
- Verify labs (BMP, CBC, PT/INR); within last 30 days.
- Verify 12 lead EKG complete (within last 30 days)
- Pregnancy waiver or test if **9-56** years of age
- MARK/Document radial/DP PULSES & CAPILLARY REFILL

MRI with Anesthesia

- **IV 20 G, verify MRI Safety sheet, (no metal)**

How to access patients Chart, arriving in pre, status board

Patient will show up on the 5th floor CD5 Pre/ Recovery status board once they arrive but location will be in MRI. Patient can be pulled to West Location by searching name on status board and updating location→ Actions tab (circle with 3 dots) Select Update Patient Location from drop down Menu→Under location place type in desired location Ex. W11.

The patient's chart can also be accessed using the Epic tab→Hospital Chart→ type in patients MRN

Work UP

- Complete MRI form
- Same prep questions as all pts
- PIV & IV fluids 1 Liter of NS
- Anesthesia (consents patient)
- H&P (within 24 hours by service) Make sure it is titled as H&P/ if not page floor team to complete. If outpatient, notify Charge RN if no H&P

Chapter 6: Recovery Room Guidelines

Update Nov 2023

How to Access the Status Board

From the Status Board go to Actions Tab(circle with 3 dots inside upper right corner,)→from drop down MENU select CD5 Prep/ Recovery SB→Run

Recovery Room Process

The Center Charge Nurse will assign patients based on the length and time in recovery, discharge criteria and acuity.

1. Procedure RN calls out the Center Charge RN 5 minutes before leaving procedure room. Procedure RN gives succinct report including patient name, procedure, sedation type, isolation status, admission status.
2. Charge RN gives Procedure RN bay assignment. Charge RN updates patient location to assigned bay. Charge RN will attempt to inform Recovery RN of patient arrival.
3. Procedure RN brings out patient to assigned bay.
4. Recovery RN changes patient status to "In Post" or "Recovery".
5. Procedure RN reports off to Recovery RN. If anesthesia, then CRNA or Anesthesiologist will report off as well. Recovery RN and Procedure RN will connect patient to wall monitor and assess VS.
6. Recovery RN calls 5th floor waiting area (or 7th floor after 5pm) within 10 minutes (if patient is stable) to request family be brought to patient bay. If PSC available in recovery, PSC may call for family.

Recovery Room Workflow

- You must record first set of VS (Temp, HR, RR, BP, O2) (EKG strip if Anesthesia), procedure focused assessment, LOC, Aldrete, Fall Scale, and pain.
- Moderate sedation: VS q15 min x 3 minimum.
- General Anesthesia: VS q5 min if deep sedation, q 15 min if Aldrete 8 or >.
- Always ensure cart is at lowest point, side rails are up, and call light is within reach (even if patient is sleeping).
- Anesthesia patients **MUST** be signed out by an Anesthesiologist.
- Inform the Center Charge RN if you have any questions or patient concerns.
- **Do not feed** CERT patients until Okayed by MD, NP, or PA.
- If you need to contact a physician:
    - If MD is in procedure room with a patient, call into that procedure room
    - If MD is not in procedure room, page MD
    - Contact APN FIRST for CERT Patients

- Always check orders and acknowledge
- Check Blood Sugar if diabetic, use Nursing protocol order set.
- Keep 2 hours in recovery if reversal medications given.

Orders

Anesthesiologists will place recovery protocol orders to be acknowledged and used if necessary. Release Orders Upon receiving patient. Verify no pending orders before discharge, Verify discharge orders before discharging patient. If CERT patient must have a discharge order from NP, ALL ANESTHESIA PATIENTS MUST HAVE A RETURN TO BASELINE NOTE IN EPIC AND OR A DISCHARGE ORDER FROM ANESTHESIA.

Printing Provation Report

1. Access Chart Review
2. Go to Procedures
3. Click on link
4. Click hyperlink to display PDF
5. Print

Changing the Patient's Status

The charge nurse will update your patient's location to one of your assigned bays; it is your responsibility to update your patient's status.

To Change a Patient Status

POST

Right click on patient→select in post

Ready for Discharge

Right Click on patient→select ready for discharge

Delays in Discharging

You are expected to discharge your patient at the end of their anticipated recovery time. If there are expected delays in discharge (waiting for MD/Anesthesia/ NP, completion of nursing tasks, change in patient status) inform your charge nurse immediately, update status board appropriately.

To put in a delay go to →Actions tab (circle with 3 dots inside, top right corner)→select delays from drop down Menu→ Fill in delay type (where the patient is), delay reason (examples given above)), and free type extra comments as necessary.

How to Discharge a GI/Pulm/CERT and Cath Lab Patient

THIS IS A 2 STEP PROCESS FOR ALL OUTPATIENTS ONLY

Step 1. Right click on patient→select periop care complete (the patient will fall off the status board and chart will become greyed out)

Step 2. Selecting the same chart right click→ discharge→enter time, date of discharge and patients disposition (free type using T and N and H or use selections from drop down Menu)

INPATIENTS

ONLY COMPLETE STEP 1

If a patient is accidentally discharge follow these STEPS

How to Undo a Discharge

For GI/Cath Patients only:

1. If the patient is not leaving the facility but they have been accidentally discharged, you can UNDO the discharge to put the patient back on the census.
2. Click *EPIC* in the top Left corner of the main status board.
3. Hover over *Registration/ADT*.
4. Click *Event Management.*
5. Search for patient using MRN.
6. Locate and click the Discharge event you wish to undo.
7. Click *Undo Last Event.*
8. Enter a reason.
9. Click *Accept*.

How to Discharge an IR or MRI patient

THIS IS A 2 STEP PROCESS FOR BOTH INPATIENTS AND OUTPATIENTS

Step 1. Right click on patient→ select Discharge from Menu (the patient will fall off the status board and chart will become grey)

Step 2. From the Actions Tab (circle with 3 dots inside, top right corner)→ Select Update Patients Location from drop down Menu→Under location insert patients disposition free type Home of Floor

RN Assessment

While the patient is in recovery it is the expectation that the patient is assessed every 15 minutes and or as more frequent and necessary based on the patient's condition.

RN Documentation

- ✓ Chart outpatient belongings returned
- ✓ Discharge Summary filled out entirely as applicable

- **Vital Signs** to be documented every 15 minutes, more if necessary depending on patient's condition. Temp, HR, RR, BP, EKG Strip in Anesthesia.
  NO sedation: VS x 1
  Mild/Moderate Sedation: VS x 3 minimum
  MAC/ General Anesthesia: VS q 5 min if deep sedation, q 15 min if Aldrete is greater than 9.
  Please Refer to Aldrete Guidelines if less than 9

- **Procedure Focused Assessment** to be documented every 15 minutes more if status change
- **Falls Assessment** Documented, and Interventions Implemented. If the patient received Conscious Sedation, Monitored Anesthesia Care, or General Anesthesia the Medication Score is Automatically a 15, if not before in prep. The gait is automatically a 20 for Impaired (due to the risk of sedation). This can increase the score from Prep.

Recommendations for Anesthesia Patients

ALL patients receiving Anesthesia should have a wheelchair for transportation (this includes transporting to the bathroom and discharge),if the patient refuses this should be documented.

For Anesthesia patients: for bathroom transport, a hospital personnel OR family member Must Accompany them while in the bathroom to ensure patient safety. (Please explain that this is for their safety)

- **Aldrete** every 15 minutes

Aldrete: Used for sedation and post-anesthesia recovery. Post procedure score less than 9 (not baseline) at 1 hour requires further assessment and monitoring. ***Monitoring is required every 5 minutes until Aldrete is back to baseline or "9".***

- **Waldo** any devices, lines, drains, puncture sites, surgical incisions. Once Upon Admission and at discharge

RECOVERY GUIDELINES

SEE CHART IN CH. 6 EDUCATION

Discharge Criteria

Once your patient has met their appropriate level of time, been seen and signed out by the MD (where applicable), seen and signed out by anesthesia, seen and signed out by the Nurse Practitioner and order placed for ALL CERT PATIENTS, the patient is then appropriate for discharge or transfer. *See Ch. 6 for Recovery Guidelines and discharge criteria.*

Transportation

When a patient is close to discharge time, ordering transportation is best. ALL ANESTHESIA PATIENTS require wheelchair transportation, if refusal documentation required. All In patients must be transferred back on the cart if they received sedation or anesthesia. To order transportation from the CD5 Pre/Post Status Board go to MORE select Patient Transport from the drop down MENU, the patient transport box appears. Ensure the PICKUP AND DROP OFF LOCATION ARE ACCURATE. If it is an outpatient you may select BACK TO BED. Provide your number, mode of transportation and any additional comments below.

Kaizen Health UCars

If a patient does not have a verified ride home, the patient can receive a Kaizen Car (Uber) home provided by the Hospital. The REQUIREMENTS ARE: ***1***. PT IN STABLE CONDITION (VS, ALDRETE SCORE BACK TO BASELINE). ***2.*** NON ANESTHESIA PATIENTS ***3***.APPROVAL FROM PROVIDER ***4.*** NOTIFY MANAGER ***5.*** RESPONSIBLE ADULT AT HOME TO RECEIVE PATIENT.

Admission Criteria

Initial G tube placement, Initial Drain placement, Zephry valves (Endoronchial Valve), UFE's, and PCI's will be admitted (usually if stable to observation). The patient will need 2 orders placed in Epic ***1.*** Bed Request ***2*** Admit Order specifying their disposition. Without both orders the patient will not receive a bed. If done correctly your patient's status should be Ready to Plan. If you do not see both orders and the Ready to Plan, please see your charge nurse.

To access the Status Board to see updated patient status for transport and bed assignment

Go to Status Board→circle with 3 dots inside upper right corner→from drop down Menu select Settings→From list select CD5 Transport and Bed Status

Bed Access

You can call the bed desk office if you are having trouble viewing orders; or you don't see the Ready to Plan on the Status Board, 49130 is the extension.

How to see access bed board management

From the Status Board there is a hospital logo with a cross inside, if you do not have this you can add it using Ctrl+Alt+4.

Admission Process Escalation

To escalate after-hours bed assignment and cleaning, page HOA at 7500 and keep your manager informed if he/she is not on the unit.

Chapter 5: Important Phone Numbers

5th Floor Numbers

17,18,19	**68355**		**CERT NP**	**21459, pager 4446**
27,28,29	**68337**		**CERT NP**	**68228, pager 3018**
East Charge	**68797**		**CERT PA**	**28766, pager 9931**
East RN Station	**68393**		**5th floor Lobby**	**63098**
West Charge	**68795**		**5th floor KAT**	**22955**
West RN Station	**27235**		**5th floor PCM, Robin**	**68332, 68799**
Center Charge	**68796**		**GI/PULM/CERT PCM, Crystal**	**51555**
Center RN Station	**68343 [W], 68349 [E]**		**Bed Access**	**49130**
GI Charge	**68894**		**EVS**	**68745, 68744**
CERT Charge	**68882**		**CT**	**68360**
Cath Charge	**68757**		**Xray- CCD**	**68361, 29149**
IR Charge	**68318, 69333**		**MRI - CCD**	**68403, 68401**
IR Manager Stuart	**pager 3385**		**Transport**	**55537, 69312**
NSA	**68647**		**Transport Managers**	**61876, 61877, pager 8577**
Important Hospital Numbers				
Cost Center	**33004**		**IR Resident on Call**	**pager 7046**
7th floor reception desk	**26545**		**IR Scheduler**	**68317**
Admitting, 7th floor	**68230**		**Difficult IV Start Request 0800 -2300**	**90452- Enter all information requested**
Anesthesia, 5th floor	**61867**		**Lab-3F**	**47351**
Anesthesia after hours	**64470, pager 4470**		**Lab - Main**	**21316**
AOC	**pager 7500**		**Lab - Chemistry**	**21772**
Apheresis	**20236**		**Lab - Coagulation**	**21315**
Blood Bank	**26827**		**Lab - Pathology**	**61480**
CCU Fellow on Call	**pager 4228**		**Language Line**	**133**
CCU Resident on Call	**61710, pager 7228**		**Linen**	**pager 2900, 1500**
Chemo- DCAM	**29473**		**Mitchell TW140**	**25424**
Clinical Engineering	**61407**		**MRI - DCAM**	**40741**
CT -DCAM	**47048**		**MRI - Mitchell**	**23523**
Cytology	**66441, 66442**		**Narc Tech**	**7877**
DCAM PACU	**20944**		**Nuclear Medicine - Mitchell**	**52909, 58315**
Dialysis	**21795**		**Nuclear Cardiac 5H**	**53312**

Dietary	**43000, fax 51882, pager 5042**		**Oxygen Tanks**	**pager 3465**
Diet sheets	**61333, 61335**		**Patient Relations**	**68353**
Echo	**21843; 68445**		**PET**	**20383**
EKG	**68794, 69794, 68127**		**Pharmacy**	**21299**
EP Device Check	**pager 4118**		**Pharmacy - IV Room**	**24311**
ER Charge RN	**53551**		**Plant**	**26295**
Important Hospital Numbers Cont'd				
EVS Manager	**68861, 68860**		**Radiology Holding, 5th floor**	**68383**
GI Scheduling	**26767**		**Radiation Oncology**	**22525**
Glucometer Repair/ POCT	**20390**		**Respiratory**	**61890, Charge 61888**
Hospitalist	**pager 9100**		**Respiratory - Blood Gas**	**69185**
Infection Control	**pager 7025**		**Risk Management**	**40473, pager 1241**
Interpreter Services	**26330, pager 4331**		**Security**	**26262**
IR APN	**pager 9582**		**Social Work on Call**	**pager 8165**
IR Neuro Reading Room	**58044**		**Supply**	**21888, pager 2900**
IR Reading Room	**41513**		**US - CCD**	**68380**

GI Procedure Room Numbers

Room	Wall Phone	RN Phone
GI 1	68436	68869
GI 2	68439	68871
GI 3	68438	68873
GI 4	68440	68875
GI 5	69300	68877
GI 6	68446	68880
Bronch 1	68384	68892
Bronch 2	68390	69790

IR Procedure Rooms

Room	Room Phone	Work Area Phone
2	68303	68304

3	68305	68306
4	68307	68308
5	68310	68311
6	68312	68313
7	68314	68315

Cath Lab

	Room Phone	Work Area Phone
RHC	68301	68302
Charge RN	68757	

Mitchell Room Numbers

Location	Unit	Room	Number
3SE	Hosp, Gen Med, APN	303-322	41262
3SW	Hosp, Gen Med, APN	352-376	26587
5SE	Hosp, Gen Med, APN	503-525	21742

CCD ICUs Room Numbers

Location	Unit	Room	Number
3E N	SICU	3048-3059	60396
3E S	Burn Unit	3060-3067	60395
4E	CCU	4044-4071	60495
8N	Neuro ICU	8033-8044	68366
8S	Neuro/ Hospitalist ICU		
9N	MICU	9033-9044	69366
9S	MICU	9077-9088	69376

CCD Non-ICU Room Numbers

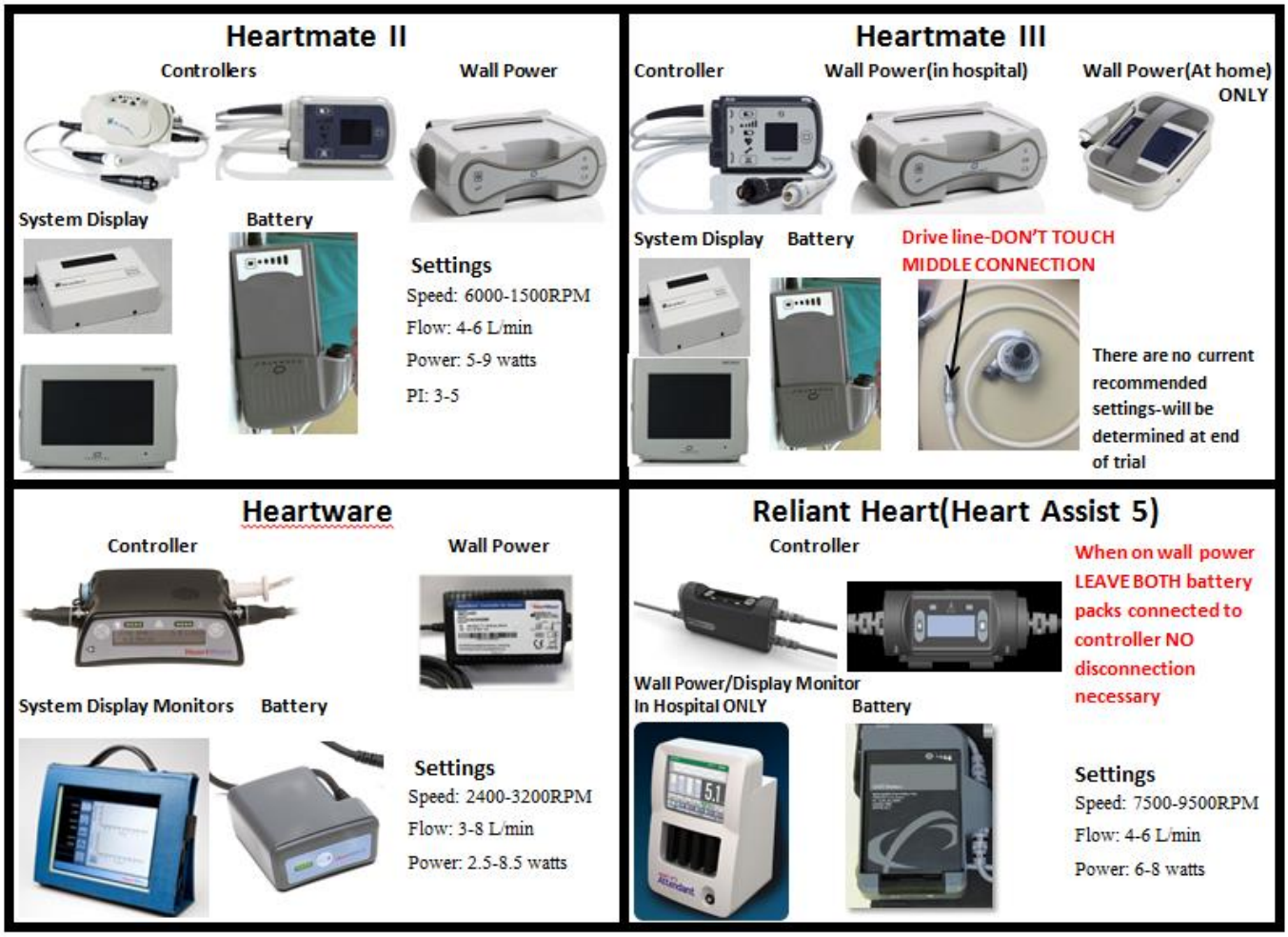
Location	Unit	Room	Number
3C N	ENT, Gen Sx, IBD, Liver, Gastro, Colon & Rectal Sx, Endo/Fertility	3032-3047	68952
3C N	Observation	3521-3536	68952
3C S	ENT, Gen Sx, IBD, Liver, Gastro, Colon & Rectal Sx, Endo/Fertility	3068-6084	60394
3C S	Observation	3481-3486	60394

3W	Gen Sx, Gastro, Hosp Liver, Hosp Renal Transplant, Plastic Sx, Transplant	3002-3027	60392
4C N	Card Sx, Hosp Cards, Thoracic Sx, CCL, Vascular Sx, Lung Transplant	4032-4043	60493
4C N	Observation	4521-4536	60493
4C S	Card Sx, Hosp Cards, Thoracic Sx, CCL, Vascular Sx, Lung Transplant	4072-7084	60494
4C S	Observation	4481-4486	60494
4W	Cardiology, Cardiothoracic Surgery	4002-4031	60492
8E	Neuro/Transplant	8045-8076	68336
8W	Gyne, Gyne Onc, Ortho, Urology	8001-8032	68396
8S	Surge ICU/APN ICU	8077-8088	68376
9E	Consolidated Med, Med	9045-9076	69336
9W	Consolidated Med	9001-9032	69396
10W	Medical Oncology	10077-10088 10002-10032	61396
10E	Heme Onc, Transplant	10033-10075	61336

Chapter 6: Education

LVAD

PAGER-4VAD(4823)



How to add a Printer to your Computer:

1. Click the Windows icon.
2. Click *Devices and Printers*.
3. Click *Add a printer*.

4. Click *Add a network, wireless, or Bluetooth printer*.
5. Click *The printer that I want isn't listed*.
6. Choose *Add a printer using a TCP/IP address or hostname*.
7. Click *Next*.
8. Enter the IP address in the text box titles *Hostname or IP address*. (THE IP ADDRESS IS LISTED ON THE LABEL ON THE PRINTER – example: 10.165.50.555)
9. Click *Next*.
10. Click *Next* again. (You don't have to select the printer)
11. Ensure that *Use the driver that is currently installed* is selected and click *Next* again.
12. Rename the printer East, West, or Center and click *Next*.
13. Click *Next* again.
14. Ensure that *Set as the default printer* remains selected if you want this printer to be the default printer.
15. Click *Finish*.

IR Information- add IR information sheet 2023

Update Nov 2023

Iodine Allergy Pre Medication

Patients with Iodine allergy and having a procedure with contrast should be pre medicated before their procedure to decrease the risk of an allergic reaction.

*Patients with shellfish allergies do not need to follow this protocol, must be ***True*** Iodine Related Allergy.

Pre Medication Protocol:
Adult oral regime (2 choices)

- 50 mg prednisone by mouth at 13 hours, 7 hours and 1 hour before contrast medium administration, plus 50mg diphenhydramine (Benadryl) intravenously
- 32 mg methylprednisolone (Medrol) by mouth 12 hours and 2 hours before contrast administration. 50 mg diphenhydramine (Benadryl) by mouth 1 hour before contrast administration may be added.

**If there is a discrepancy in the time and dosages please alert the doctor or nurse practitioner immediately before prepping patient for procedure.

Emergent: Accelerated Adult IV regime: See policy # 2037 for three dosing options, a minimum of 4-5 hours between onset of corticosteroid administration and contrast administration is recommended.

- Hydrocortisone 200 mg IV immediately and then every 4 hours until contrast medium administration. plus 50 mg Benadryl @ 1 hour prior with a minimum of 2 doses of hydrocortisone 4 hours apart.
- See policy # 2037 for all dosing options.

For Pediatric Dosing please refer to **Policy PC 2037.

Isolation

Isolation Patients

1. Turn over appropriate isolation sign under bay number and pull Metrocart outside of room.
2. All patients with a history of isolation must be on isolation and the charge RN should be made aware. This is supported by the hospital isolation policy.
3. When the patient leaves the bay, call EVS 68745 or 68744 to come clean bay.

4. After room is cleaned, EVS should turn over Isolation Sign.

All personal protective equipment (PPE) should be stored outside patient's room or cubicle. PPE should be put on before entering room by anyone (regardless of whether they will touch anything in the room). All PPE, except a mask or N95 respirator should be removed and disposed of before leaving the patient's room. Standard precautions should be followed for each patient. Wash or sanitize hands when entering and when leaving any patient room.

STRICT Isolation (E.G. CHICKENPOX) *(Let room sit for 45 minutes after patient leaves)*

- Gloves
- Gown
- Mask
- *Negative Pressure Room*

DROPLET Isolation (E.G. INFLUENZA, MENINGOCOCCAL MENINGITIS)

- Surgical mask

AIRBORNE Isolation (E.G. TUBERCULOSIS, MEASLES) *(Let room sit for 45 minutes after patient leaves)*

- Negative Pressure Room
- N95 Respirator or PAPR

CONTACT Isolation (E.G. RSV, ROTAVIRUS, MRSA, VRE)

- Gloves
- Gown

CONTACT PLUS Isolation (SUSPECTD OR CONFIRMED GI PATHOGENS; e.g., C. DIFF TOXIN POSITIVE, SALMONELLA, SHIGELLA, ROTAVIRUS, ADENOVIRUS, NOROVIRUS, SAPOVIRUS)

- Gloves
- Gown
- Disinfectant with bleach should be used to clean environmental surfaces.
- Confirmed CRE and C-diff require a curtain change.

PROTECTIVE Isolation (E.G. NEUTROPENIC PATIENTS)

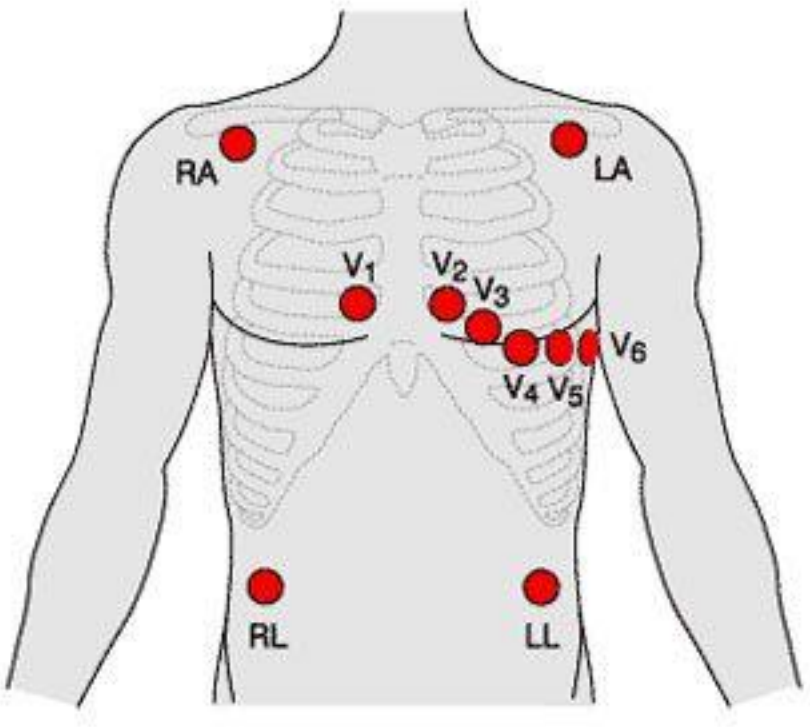
- Mask (only for individuals with respiratory symptoms who must enter the room)
- Articles (you must wipe articles (e.g. stethoscope) with before and after use)

SPECIAL HANDLING PRECAUTIONS (CRUETZFELDT JAKOB)

- LABEL all Blood or CSF Specimens
- Contact Infection Control for Special Instructions

ALL COMMON USE ARTICLES TAKEN INTO A PATIENT ROOM (e.g. stethoscopes, scissors, wheelchairs) MUST BE SANITIZED with sani-wipe or alcohol before storage or re-use REGARDLESS OF ISOLATION STATUS. INFECTION CONTROL ON CALL PAGER **7025**

12 Lead EKG Electrode Placement



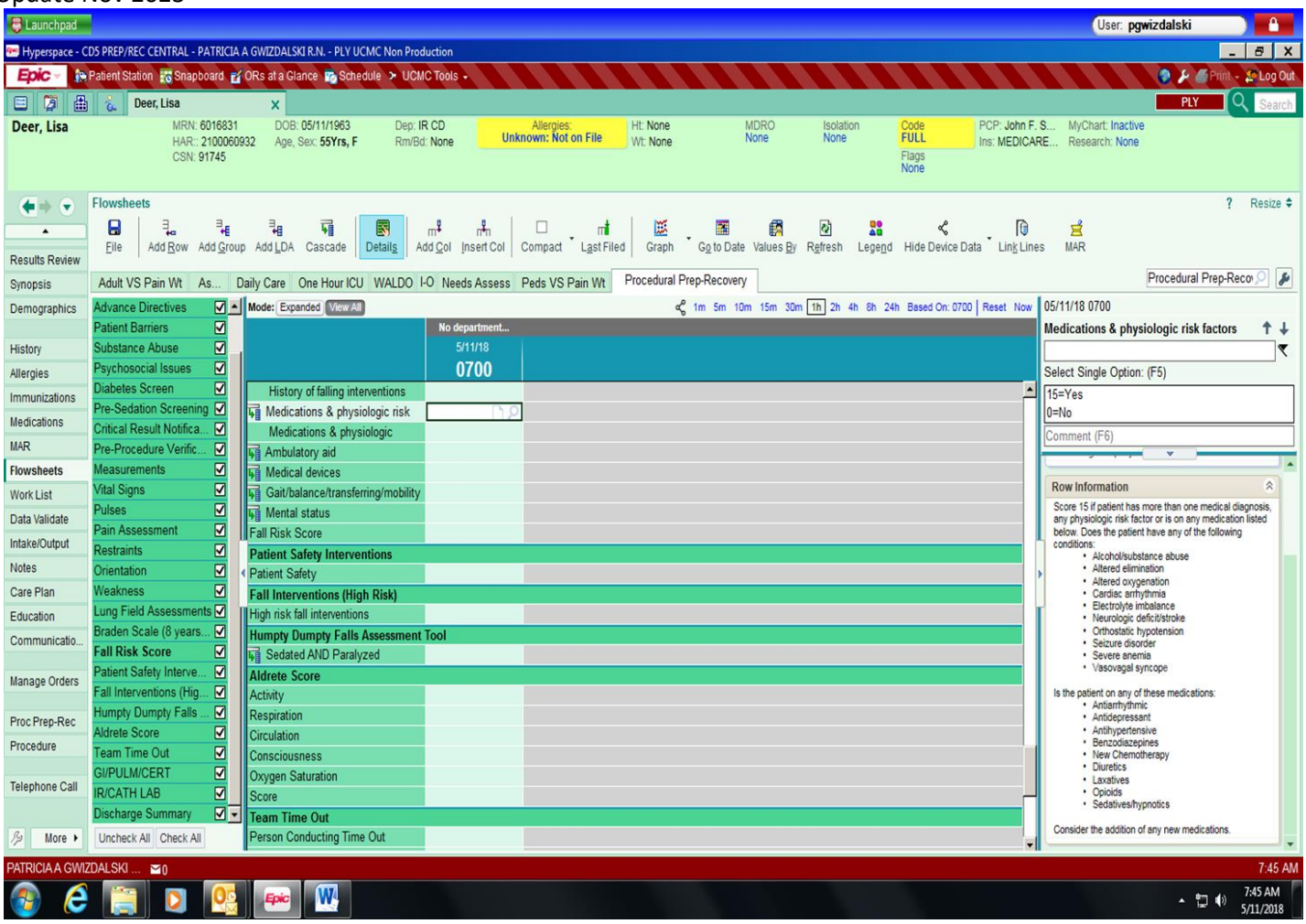
V1 – 4th intercostal space to the right of the sternum
V2 – 4th intercostal space to the left of the sternum
V3 – midway between V2 and V4
V4 – 5th intercostal space at the midclavicular line
V5 – anterior axillary line at the same level as V4
V6 – midaxillary line at the same level as V4 and V5
RL – anywhere above the ankle and below the torso
RA – anywhere between the shoulder and the elbow
LL – anywhere above the ankle and below the torso
LA – anywhere between the shoulder and the elbow

FALLS

The Fall Risk Scale is to be completed on every patient in Prep, Recovery, and status post a fall using the Morse., J, Scale. Patients who score <45 upon assessment will be placed on High Fall Risks Precautions

It is important that we document an accurate score in PREP so that the score is accurate in recovery. If scoring higher than a zero for any question, an Intervention Must Be Documented and Implemented to ensure Patient Safety.

Update Nov 2023



IMPORTANT THINGS TO REMEMBER

The Falls Risk Scale is a *Nursing Driven Protocol*, any patient may be placed on fall risk precautions if score doesn't equal to or is greater than 45.

Additional Interventions Required for Protocol

- Fall Risk Band (Yellow Band)
- Sticker placed on Communication Form for quick visual 
- Wheel Chair for transport (if patient refuse you must document)

*For Pediatric Patients the Humpty Dumpty Scale is Use.

Pediatric Patients

Occasionally we do see pediatric patients in GI, IR, and MRI; majority of these cases will be scheduled with Anesthesia. These patients get prepped the same way using the same flowsheet.

Here are Important things to know

- Upon Assessment the RN should identify caregivers and ensure the patient and caregivers ALL have identification bands on using the patient labels.
- All Pediatric Patients will come to prep areas (East and West) but the requirements for a pediatric patient to recover in the Center are ; over the age of 12 and of <40 kilograms. If they do not meet these requirements they are taken to the pediatric PACU in Comer. Make sure to inform the caregivers of this and be sure to have accurate contact information on communication form. Anesthesia will coordinate transfer with caregivers once procedure is complete.

*If there is a peds sedate patient scheduled these patients go directly to the Procedure Rom with a Specialized Team, and are then transferred back to Comer.

Certified Child Life Specialists provide evidence-based, developmentally appropriate interventions including therapeutic play, preparation and education that reduce fear, anxiety, and pain for children and youth. Please call if assistance is needed. Give patients name, MRN#, scheduled procedure, and location.

Child Life Specialist

Tracy Lau- Esquibel

5-5135

Child life Playroom 26481

Swan Ganz Catheter

- **Where is it….**

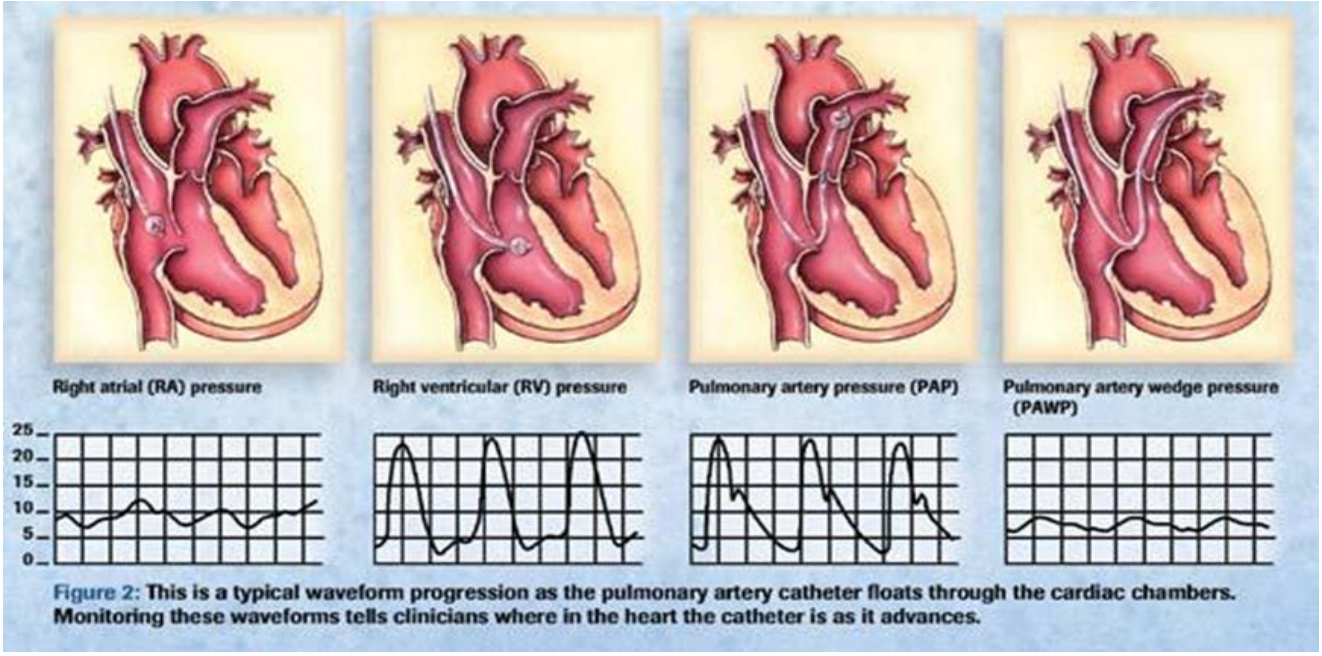


Figure 2: This is a typical waveform progression as the pulmonary artery catheter floats through the cardiac chambers. Monitoring these waveforms tells clinicians where in the heart the catheter is as it advances.

Ports on the swan…

- ***Proximal port*** – ***Blue*** used to measure CVP/RAP and injectate port for measurement of cardiac output
- ***Distal port*** – ***Yellow*** used to measure pulmonary artery pressure and allows drawing of mixed venous blood samples
- ***Balloon port*****- *Red*** Used to determine pulmonary wedge pressure
- ***Infusion port*** –***Orange or white*** used for fluid administration

Markings

- small black line= 10 cm
- large wide black line = 50 cm

Normal Parameters:

Update Nov 2023

TR BANDS

Green dot is the location of the puncture site.

What to do…

- Monitor continuous pulse ox on the thumb with the TR band to ensure perfusion through the radial artery. ***Sudden (and consistent) low pulse ox reading may be a vascular emergency. Notify MD immediately***
- After 2-4 hours the air in the cuff is slowly removed per protocol until hemostasis is achieved and the band is removed.
    - TR band removal begins after 2 hours for non-intervention and after 4 hours for intervention procedures. The MD's post-procedure orders should specify the appropriate instructions to follow. See examples below:

Procedure Instructions: Trans-Radial Band Removal (Non-Intervention) [305053] Start: 01/31/17 1224, UNTIL SPECIFIED, ROUTINE

Question	Answer	Comment
Procedure:	Trans-Radial Band Removal (Non-Intervention)	
Instruction 1:	Withdraw 5 mL air after 2 hours. If no bleeding please repeat process every five minutes until balloon is fully deflated.	
Instruction 2:	If bleeding occurs, re-inject 5 mL of air, wait 30 min and withdraw 5 mL of air again. Repeat until 5 mL is removed	
Instruction 3:	Remove arm band and observe for 30 min. Hold pressure and call fellow if re-bleeds.	
Instruction 4:	When band is completely removed - please apply occlusive dressing to site	

Procedure Instructions: Trans-Radial Band Removal (Intervention) [305054] Start: 01/31/17 1224, UNTIL SPECIFIED, ROUTINE

Question	Answer	Comment
Procedure:	Procedure Instructions: Trans-Radial Band Removal (Intervention)	
Instruction 1:	Withdraw 5 mL air after 4 hours. If no bleeding please repeat process every five minutes until balloon is fully deflated.	
Instruction 2:	If bleeding occurs, re-inject 5 mL of air, wait 30 min and withdraw 5mL of air again. Repeat until 5 mL is removed.	
Instruction 3:	After 30 min, repeat steps 1 and 2	
Instruction 4:	Remove arm band and observe for 30 min. Hold pressure and call fellow if re-bleeds.	
Instruction 5:	When band is completely removed - please apply occlusive dressing to site	

- Only a specific syringe can be used to aspirate air. Call the **Cath lab charge nurse at extension 68757** to obtain a syringe if needed.
  When aspirating air, apply your thumb on the plunger to avoid abrupt deflation of the balloon.

Malignant Hyperthermia Tip Sheet

Malignant Hyperthermia (MH) is an inherited disorder of skeletal muscle triggered in susceptible indiviuals by general anesthetics, inhalation agents and the paralyzing agent succinylcholine. MH can develop during or after general anesthesia. (www.mhaus.org) 2023
Early signs – end tidal Co2 increases, masseter muscle rigidity
Late Signs- Hyperthermia; rising core body temperature, severe hyperthermia associated with DIC

Emergency Treatment for an Acute MH Event

The following four things should be done as soon as possible:

 Notify surgeon to halt the procedure ASAP: Discontinue volatile agents and succinylcholine.

– If surgery must be continued, maintain general anesthesia with IV non-triggering anesthetics (e.g., IV sedatives, narcotics, amnestics and non-depolarizing neuromuscular blockers as needed)

 Get dantrolene/MH cart. Located on CCD 6 Floor GOR
□ Call for help
□ Get Crash Cart to bedside
□ Call the MHAUS Hotline (1-800-644-9737) for additional advice.

 Hyperventilate with 100% oxygen at flows of 10L/min to flush volatile anesthetics and lower ETCO2. If available, insert activated charcoal filters (Vapor-Clean™, Dynasthetics, Salt Lake City, UT) into the inspiratory and expiratory limbs of the breathing circuit. The Vapor-Clean™ filter may become saturated after one hour; therefore, a replacement set of filters should be substituted after each hour of use.

 Give IV Dantrolene 2.5 mg/kg rapidly through large-bore IV, if possible. Repeat as frequently as needed until the patient responds with a decrease in ETCO2, decreased muscle rigidity, and/or lowered heart rate. Large doses (>10mg/kg) may be required for patients with persistent contractures or rigidity. May need repeat doses.
i.e.100kg patient: initial dose 2.5mg / kg = 12 vials

– DANTRIUM®/REVONTO® – Each 20 mg vial should be reconstituted by adding 60 ml of sterile water for injection, USP (without a bacteriostatic agent) and the vial shaken until the solution is clear.

Post Treatment includes:

- Observe patient in ICU for 24-36hours
- Continue to administer Dantrolene sodium for at least 24hours
- Continue to flow patient's vitals closely m mental status and labs(K,CA, CK)

- Monitor urine output, color and flow.
- Follow liver dysfunction
- Observe for muscle weakness
- Counsel family for MH precautions and testing

Cool the patient if core temperature is >39°C or less if rapidly rising. Stop cooling when the temperature has decreased to <38°C.

Malignant Hyperthermia Tip Sheet

https://www.mhaus.org/healthcare-professionals/managing-a-crisis/ Revised: 2023

If hyperkalemia (K > 5.9 or less with ECG changes) is present, treat with:
 Calcium chloride 10 mg/kg (maximum dose 2,000 mg) or calcium gluconate 30 mg/kg (maximum dose 3,000 mg) for life-threatening hyperkalemia

 Sodium bicarbonate
– 1-2 mEq/kg IV (maximum dose 50 mE Glucose/insulin

– For ***pediatric patients***: 0.1 units regular insulin/kg IV and 0.5 grams/kg dextrose (% in formulation not important)
– For adult patients: 10 units regular insulin IV and 50 ml 50% dextrose
– Check glucose levels hourly
 For refractory hyperkalemia, consider albuterol (or other beta-agonist), kayexelate, dialysis, or ECMO if patient is in cardiac arrest.
 Treat dysrhythmias with standard medication but avoid calcium channel blockers. Treat acidosis and hyperkalemia if present. (See above)
 Diurese to >1ml/kg/hr urine output. If CK or K+ rise, assume myoglobinuria and give bicarbonate infusion of 1 mEq/kg/hr, to alkalinize urine
 Institute appropriate monitoring including: core temperature, urine output with bladder catheter, and consider arterial and/or central venous monitoring if warranted by the clinical severity of the patient.

 Follow: HR, core temperature, ETCO2, minute ventilation, blood gases, K+, CK, urine myoglobin and coagulation studies as warranted by the clinical severity of the patient.

 When stable, transfer to post anesthesia care unit or intensive care unit for at least 24 hours. Key indicators of stability include:
 ETCO2 is declining or normal
 Heart rate is stable or decreasing with no signs of ominous dysrhythmias
 Hyperthermia is resolving
If present, generalized muscular rigidity has resolved

MH cart locations:

Comer OR – across from OR# 3, Comer control desk # 2-6585
DCAM OR – Anesthesia Workroom
CCD OR – East Sub Command desks, charge RN # 5-4608

Recovery Guidelines:

Procedure Name	Sedation Type	Recovery Time Frame	Considerations
IR Procedures			
Angiogram Intervention	Moderate	• 6 hrs flat for manual hold • 2-4 hrs flat for angioseal • If inpatient, minimum 1 hour in recovery	• Possible Admit to Hospital • Monitor pulses, site, and VS q 15min x 1 hour, q 30min x 1 hour, then hourly
Angioplasty and Vascular Stenting	Moderate	• 6 hrs flat for manual hold • 2-4 hrs flat for angioseal • If inpatient, minimum 1 hour in recovery	• Possible Admit to Hospital • Monitor site and VS q 15min x 1 hour, q 30min x 1 hour, then hourly
Thrombolytic Therapy	Moderate		ICU Admit
Inferior Vena Cava (IVC) Filter Placement	Minimal	• 2 hours • If inpatient, minimum 1 hour in recovery	• Monitor site and VS q 15min x 1 hour, q 30min x 1 hour, then hourly
Inferior Vena Cava (IVC) Filter Removal	Minimal	• 2 hours • If inpatient, minimum 1 hour in recovery	• Monitor site and VS q 15min x 1 hour, q 30min x 1 hour, then hourly
AV Graft/Fistula Check	Moderate	• 1 hour after last sedation administration	• Check bruit/thrill • Monitor site and VS q 15 min until discharge with minimum 2 sets of vitals.
AV Graft/Fistula Stent Placement	Moderate	• 1 hour after last sedation administration	• Check bruit/thrill • Monitor site and VS q 15 min until discharge with minimum 2 sets of vitals. • Dialysis post procedure for INPT
AV Graft/Fistula Declot	Moderate	• 1 hour after last sedation administration	• Check bruit/thrill • Monitor site and VS q 15 min until discharge with minimum 2 sets of vitals. • Dialysis post procedure for INPT
Uterine Artery Embolization (UAE)	Moderate	• 6 hours flat • If inpatient, minimum 1 hour in recovery	• Possible 23^{o} obs admission • Monitor site and VS q 15min x 1 hour, q 30min x 1 hour, then hourly
Chemoembolization	Moderate	• 6 hrs flat for manual hold • 2-4 hrs flat for angioseal • If inpatient, minimum 1 hour in recovery	• Possible Admit to Hospital • Monitor pulses, site, and VS q 15min x 1 hour, q 30min x 1 hour, then hourly
Sclerotherapy			
Radiofrequency Ablation (RFA)	Moderate/ General/MAC Anesthesia	• 4 hours • If inpatient, minimum 1 hour in recovery • Requires Anesthesia sign out before d/c.	• Monitor for s/s bleeding; may cause referred shoulder pain • Possible 23^{o} obs admission • Requires Anesthesia sign out before d/c
Biliary Tube New Placement	Moderate	• Minimum 1 hour in post • Same if inpatient	• Admit to Hospital • Watch for s/s of rigors

			• Monitor site and VS q 15min x 1 hour then hourly
Biliary Tube Exchange	Minimal	• 1 hour • Same if inpatient	• Watch for s/s of rigors • Monitor site and VS q 15min x 1 hr
Procedure Name	**Sedation Type**	**Recovery Time Frame**	**Considerations**
IR Procedures			
Nephrostomy Tube New Placement	Moderate	• Minimum 1 hour in post • Same if inpatient	• Admit to Hospital • Watch for s/s of rigors • Monitor site and VS q 15min x 1 hour then hourly
Nephrostomy Tube Exchange	Minimal	• 1 hour • Same if inpatient	•Watch for s/s of rigors • Monitor site and VS q 15min x 1 hour
Abscess Drainage without Drain Placement	Minimal	• 1 hour after last sedation administration • Same if inpatient	• Watch for s/s rigors • Monitor site and VS q 15 min until discharge with minimum 2 sets of vitals
Abscess Drain New Placement	Moderate	• Per MD discretion • Minimum 1 hour in post • Same if inpatient	• Watch for s/s of rigors • Monitor site and VS q 15min x 1 hour • Possible 23^{o} obs admission
G Tube Placement - **Pull Type, new placement** - **Push Type, new placement** - **G-J Tube, new placement** --- - **Check and Change**	Moderate --- Minimal	• Minimum 1 hour in post (Even if INPT – 1 hr in post) --- • 1 hour after last sedation administration (30 minutes if INPT)	• Admit to hospital for all **NEW** tube placements • Monitor site and VS q 15min x 1 hour --- • Monitor site and VS q 15 min until discharge with minimum 2 sets of vitals
Tunneled Central Lines: - **Port Placement** - **Permacath Placement** - **Pheresis Catheter** - **Hickman Catheter**	Minimal	• 1 hour post sedation • Same if inpatient	• Sutures used during procedure • Monitor site and VS q 15 min until discharge with minimum 2 sets of vitals
Non-Tunneled Central Lines:	Local/Minimal	• 1 hour post sedation • Same if inpatient	• Monitor site and VS q 15 min until discharge with minimum 2 sets of vitals

- **Temp Line** - **PICC Line**			
Line Removals	Local	• Minimum of 30 minutes; IR provider discretion if patient requires 1 hour recovery. • Same if INPT	• Monitor site and VS q 15 min until d/c
Procedure Name	**Sedation Type**	**Recovery Time Frame**	**Considerations**
IR Procedures			
Transjugular Intrahepatic Portosystemic Shunt (TIPS)	General Anesthesia	• 1 hour minimum • Return to within 1 of baseline Aldrete. • Same if inpatient	• Admit to Hospital. • Monitor site and VS q 15min x 1 hour, q 30min x 1 hour, then hourly • Requires Anesthesia sign out
Transjugular Liver Biopsy	Minimal	• 2 hours • 1 hour recovery if inpatient	• Monitor site and VS q 15min x 1 hour, q 30min x 1 hour, then hourly
Lung Biopsy	Local/ Minimal	• 2 hours • Minimum 1 hour in recovery if inpatient • MD discretion whether stay in recovery until 2nd XRay or can go to floor until 2nd XRay	• Need immediate post-procedure XRay and 2 hour post-procedure XRay • NPO until cleared by IR after 2nd XRay • Monitor site and VS q 15min x 1 hour, q 30min x 1 hour, then hourly • Page for XRay to be read. When okayed, ask IR Provider to place d/c order
Percutaneous Liver Biopsy	Minimal	• 2 hours lying on side • 1 hour sitting • Total of 3 hours in recovery • Same if inpatient	• Monitor for pain, s/s bleeding • Monitor site and VS q 15min x 1 hour, q 30min x 1 hour, then hourly
Thermoablation Liver	Anesthesia	Check orders 2-4 hours	Monitor site for bleeding /Pain and VS q 15min x 1 hour, q 30min x 1 hour, then hourly
Venogram	None	• 1 set of Vital Signs • Same if inpatient	• Done for mapping
Procedure Name	**Sedation Type**	**Recovery Time Frame**	**Considerations**
Neuro			
Cerebral Angiogram **(and cerebral spinal)**	Local/Minimal Varies	• 6 hours flat unless closure device used • Minimum 1 hour recovery if inpatient	• Monitor pain, s/s bleeding • Monitor neuro checks, site, pulses, and VS q 15min x 1 hour, q 30min x 1 hour, then hourly • MD must see patient prior to d/c
Embolization/Coiling of Brain Aneurysm	Anesthesia	• 6 hours flat unless closure device used • Minimum 1 hour recovery if inpatient	• Foley inserted in prep • Admit to Hospital • Monitor pain, s/s bleeding

			• Monitor neuro checks, site, pulses, and VS q 15min x 1 hour, q 30min x 1 hour, then hourly • MD must see patient prior to d/c • Requires Anesthesia sign out
Discography	Minimal	• 2 - 4 hours flat • Minimum 1 hour recovery if inpatient	• Monitor pain • Monitor site and VS q 15min x 1 hour, q 30min x 1 hour, then hourly • MD must see patient prior to d/c
Lumbar Puncture	Local	• 2 hours flat • Minimum 1 hour recovery if inpatient	• Monitor site and VS q 15min x 1 hour, q 30min x 1 hour • MD must see patient prior to d/c
Procedure Name	**Sedation Type**	**Recovery Time Frame**	**Considerations**
Neuro			
Myelogram	Local	• 2 - 6 hours flat • Minimum 1 hour recovery if inpatient	• CT post procedure • Monitor site and VS q 15min x 1 hour, q 30min x 1 hour, then hourly • MD must see patient prior to d/c
Vertebroplasty	Moderate/ Anesthesia	• 2 - 4 hours flat • Minimum 1 hour recovery if inpatient	• Monitor site and VS q 15min x 1 hour, q 30min x 1 hour, then hourly • MD must see patient prior to d/c • Requires Anesthesia sign out
Parathyroid Hormone Sampling	Local	• 4 hours	
WADA Test (Intracarotid Amobarbital test)	Local	• 6 hours flat	
Adrenal Vein Sampling		• 4 hours	Monitor site and VS q 15min x 1 hour, q 30min x 1 hour, then hourly Monitor site
Renal Vein Sampling		• 4 hours	Monitor site
Insulinoma		• 6 hours	•Monitor for hypoglycemia
Neuro Blood Patch		• 1-2 hours	Monitor site, check PACU orders for recovery time
Procedure Name	**Sedation Type**	**Recovery Time Frame**	**Considerations**
Cath Lab			
Left Heart Cath	Minimal to Moderate	TR Band: • 2 – 4 hours Angioseal (or Perclose, or other closure device): • 2 – 4 hours	For TR: • Follow orders for removal and discharge. • If inpatient – can go to **any inpatient unit.** For Angioseal: • Same instructions as below for all For Manual:

		Manual Pressure: • 6 hours flat/ bedrest	• Same instructions as below for all • If pt has sheath in place, communicate with Cath Lab re: ACT checks • If inpt with sheath, ensure pt has bed on the 4th floor For all::: • Monitor pulses, site, and VS q 15min x 1 hour, q 30min x 1 hour, then hourly • Ensure orders have correct discharge time • If admitting, ensure correct orders in place
Right Heart Cath	None to Minimal	Non-sedated IJ: • 1 set of Vitals • Same if inpt Sedated IJ: • 1 hour after last sedation • Same if inpatient Femoral: • 2 hours flat/bedrest • 1 hour in recovery in inpt	• Check site and 1 set VS • Monitor pulses, site, and VS q 15min • Monitor pulses, site, and VS q 15min x 1 hour, q 30min x 1 hour For SWAN pts::: • Ensure correct ICU admission orders placed • If pt in recovery for 2 hours, you must hook up Swan to monitor • Pt may go to MICU or CCU
RAMP Study	None to Minimal	See above re: recovery time frame	• LVAD patient • If inpt general/tele floor, must transport with RN at bedside • If pt requires ICU bed, must go to CCU on 4 East
Pericardiocentesis	Minimal-Moderate	• 1 hour (same if inpt) • Usually inpatient	• Monitor site and VS q 15min x 1 hour, q 30min x 1 hour, hourly
Cardiomems	Minimal-Moderate	6 hour Recovery	• Patient will come to recovery with figure 8 sutures, to be removed by cath lab MD before discharge (usually 2-4 hours) • pt to lie flat, monitor for bleeding

			• Monitor pulses, site, and VS q 15min x 1 hour, q 30min x 1 hour, then hourly • Ensure orders have correct discharge time
TAVR **(Transcatheter Aortic Valve Replacement)**	Moderate sedation or anesthesia	4 hour recovery in PACU	VS including rhythm, pain score, neuro, vascular and site checks must be assessed as ordered. Bedrest restriction (√ orders) HOB < 30° if femoral sheath in place. PACU recovery time is 4 hours unless admitted to ICU. Stable patients will transfer to 4C. Plavix dose may be ordered in PACU.
Left Atrial Appendage / Watchman/Amulet device implant (Left atrial appendage closure)	Anesthesia / Mod sedation	4 hour recovery in PACU	VS including rhythm, pain, neuro,& vascular checks May have chest tube post procedure 3-4 small (dime size) incisional sites on left side of chest PACU 4 hours unless admitted to ICU, then stable patients to 4 C admit Check PACU orders
Mitral Clip	Anesthesia	4 hour recovery in PACU Admit to ICU 4E	VS including rhythm, pain, neuro,& vascular checks Bedrest for 4 hours post procedure NPO until anesthesia sign out Groin site checks, neuro, vascular checks and assessments. ASA and Plavix may be ordered in PACU, ICU Admit
PFO (Patent Foramen Ovale / Atrial Septal defect Closure	Mod Sedation	1 hours recovery in PACU/ 2 hours bedrest	VS including rhythm, pain, neuro,& vascular checks. Check and document insertion site PACU 1 hours recovery and 2 hour bedrest, or longer depending on closure device, admitted to 4C OBS . √ pacu orders ASA / Plavix may be ordered
Post Angiogram / Thrombectomy			VS including rhythm, pain, neuro,& vascular checks.Q 15 mins , check PACU orders
Procedure Name	**Sedation Type**	**Recovery Time Frame**	**Considerations**
GI			

Colonoscopy	Moderate - Anesthesia	• Minimum 30 min as long as 3 sets of VS are WNL and Aldrete = 10 • Normally 45 minutes • If inpt, 30 min minimum	• Check bowel sounds, palpate abd • Monitor VS q 15min • MD may or may not see pt prior to d/c If Anesthesia pt::: • Requires Anes sign out
Colonoscopy with FMT (fecal microbial transplant)	Same as above	Same as above	Same as above plus: • Pt gets Imodium post procedure • Pt needs to lay in reverse Trendelenburg • Encourage pt to try not to go to bathroom
EGD	Moderate - Anesthesia	• Minimum 30 min as long as 3 sets of VS are WNL and Aldrete 10 • Normally 45 minutes • If inpt, 30 min minimum	• Check for subq air, palpate abd • Monitor VS q 15min • MD may or may not see pt prior to d/c If Anesthesia pt::: • Requires Anes sign out
EGD with Dilation	Same as above	Same as above	Same as above plus: •Keep pt NPO until okayed by MD
Flexible Sigmoidoscopy	None to minimal	• If no sedation, 1 set of VS (same if inpt) • If sedation, minimum 30 min as long as 3 sets VS are WNL and Aldrete 10 (same if inpt)	• Check bowel sounds and palpate abd • Monitor VS q 15min • MD may or may not see pt prior to d/c
Manometry	None	• 1 set VS	• MD may want to see pt prior to d/c
Paracentesis	None	• 1 set VS	•infuse any leftover albumin
Breath Test	None	• 1 set VS	D/c'd from procedure room
Procedure Name	**Sedation Type**	**Recovery Time Frame**	**Considerations**
CERT			
EUS/EGD	General	• Minimum 45 min as long as d/c requirements met • If inpt, minimum 45 min recovery plus sign out from Anes and NP/PA	• Check for subq air, palpate abd • Monitor VS q 15min or more frequent depending on level of recovery • NPO until cleared by NP/PA • Do not give patient Provation report • Call family to bedside • Requires Anes sign out • Requires d/c order from NP/PA
ESG	General	• 2 hours (same if inpt)	• Check for subq air, palpate abd • Monitor VS q 15min or more frequent depending on level of recovery • NPO until cleared by NP/PA

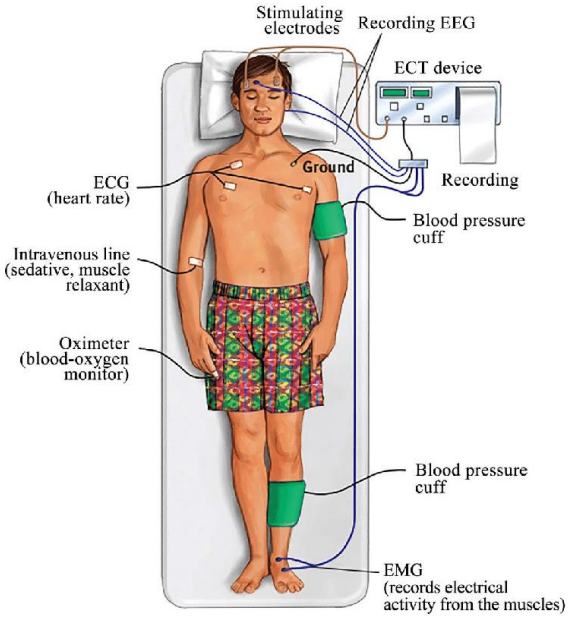
			• Do not give patient Provation report • Call family to bedside • Requires Anes sign out • Requires d/c order from NP/PA Requires a total of 3 L of LR post procedure
Colonoscopy	General	• Minimum 45 min as long as d/c requirements met • If inpt, minimum 45 min recovery plus sign out from Anes and NP/PA	• Check bowel sounds, palpate abd • Monitor VS q 15min or more frequent depending on level of recovery • NPO until cleared by NP/PA • Do not give patient Provation report • Call family to bedside • Requires Anes sign out • Requires d/c order from NP/PA
Flex Sig/ FUS	General	• Minimum 45 min as long as d/c requirements met • If inpt, minimum 45 min recovery plus sign out from Anes and NP/PA	• Check bowel sounds, palpate abd • Monitor VS q 15min or more frequent depending on level of recovery • NPO until cleared by NP/PA • Do not give patient Provation report • Call family to bedside • Requires Anes sign out • Requires d/c order from NP/PA
ERCP	General	• 2 hours (same if inpt)	• Check for subq air, palpate abd • Give continuous LR • Monitor VS q 15min or more frequent depending on level of recovery • NPO until cleared by NP/PA • Must urinate prior to discharge • Do not give patient Provation report • Call family to bedside • Requires Anes sign out • Requires d/c order from NP/PA
CPN	General	2 hours (same if inpt)	• VS q 15 min • Monitor for Othostatic changes/ record orthostats before dc
Procedure Name	**Sedation Type**	**Recovery Time Frame**	**Considerations**
Nephrology			
Native Kidney Biopsy	Local	• 4 hours bedrest • If inpt, 1 hour in recovery	• Check site upon arrival • Check VS q 15 x 4, then q 30 x 2, then hourly until d/c • Pt must urinate and be without gross hematuria prior to discharge • Pt must have ride home
Transplant Kidney Biopsy	Local	• 2 hours bedrest • If inpt, 1 hour in recovery	• Check site upon arrival • Check VS q 15 x 4, then q 30 x 2

			• Pt must urinate and be without gross hematuria prior to discharge • No ride home necessary
Electrophysiology/ TEE/Cardioversion	Anesthesia	45mins- 1 hour	• Vs Q15mins x4 • Monitor Aldrete Q 15 mins until at baseline or 9 or greater • Monitor rhythm, notify service of any change
ECT **(Electroconvulsive Therapy)**	Anesthesia	1 hour in recovery	• Monitor LOC • Oriented to person place and situation • Must be discharged with responsible adult • Anesthesia sign-out required
Drug Induced Sleep Endoscopy - DISE	Anesthesia Anesthesia	1 hour in recovery	• Dr Losavio will see patient in recovery, discharge after fully awake and one set of vitals x4 post procedure, aldrete x4 anesthesia sign out • HOB elevated at least 30 ◦ • Tolerating PO intake • Needs driver home
Flexible larngoscopy/ Laser ablation	Local	30- 60 mins post procedure.	• Voice rest • NPO for 1 ½ hours post procedure

AT THE FOREFRONT
UChicago Medicine

The Center for Clinical Professional Practice

ECT (Electroconvulsive Therapy) Tip Sheet



Key Points

- What is ECT?
  ECT (Electroconvulsive therapy) uses electricity to induce a controlled seizure and is used to treat severe depression, catatonia, mania, and psychosis
- Why is it done?
  - It is believed the seizure causes increased blood flow to the brain causing a flooding of neurotransmitters (serotonin, dopamine, norepinephrine), correction of hypothalamic-pituitary-adrenal axis, and growth in the brain
- Where are ECT performed?
  - ECT will be performed on the CCD 5 GI Procedural Room 8
    - Patients will be prep on CCD5 East and recover on CCD 5 Center

Prep

- The ECT consent is valid for 1 month. A copy should be kept on file for additional treatments. If more treatments are needed after 1 month, a new consent will be obtained.
- The pre-op RN and attending psychiatrist verify that the patient has arrived with a present and identified responsible adult to escort the patient to and from treatment.
- ECT are done usually 3x/week (Mon-Wed-Fri)
- Pt should have been instructed by psychiatrist team to hold all medications except hypertensive meds
- NPO protocol; All patients receive general anesthesia
- Patient can leave underwear on, but remove all other clothing
- All jewelry, eyeglasses, contacts, and dentures must be removed
- Remind patient to void prior to procedure (within ~15 min.)

Recovery

- Assess mental status, airway patency, vital signs (including temperature to screen for malignant hyperthermia if succinylcholine was used)
  - Orientation typically returns within 15-20 minutes
- Assess for nausea, headache, and muscle aches
  - Treat accordingly with usually ondansetron (nausea) acetaminophen (aches) as ordered
- Monitor for late-onset seizure (may occur after anesthetic wears off)
  - Treat accordingly with lorazepam as ordered
- Monitor for post-ictal confusion/delirium
  - Treat accordingly with lorazepam as ordered
- Discharge Criteria:
  - When vital signs are stable, oriented to person, place, and situation, and ambulatory
  - Must be discharged from recovery by anesthesia provider
  - Must be discharged into the care of a responsible adult (verified during prep admission)

Important Contacts

- Renata Kowalczyk, RN-Psychiatric Lead Nurse
  - Ext. 29043; pager: 8312; cell phone: 773-430-1901
- Dr. Dustin Ehsan, Psychiatrist
  - Ext. 42349; pager: 7660

2023

AT THE FOREFRONT
UChicago Medicine

Interventional Radiology

IR Main Line
Phone 2-6514
Fax 773-834-4480

IR Consults
Pager 9582
8 am – 5 pm

IR Charge Nurse
Phone 6-8318

Preprocedure holding
Phone 2-7235

Postprocedure recovery
Phone 6-8343

IR@uchicago.edu

IR On-Call Schedule & Contacts
Refer to WebXchange
under "Interventional Radiology"

Radiology Resident On Call (RROC)‡
Pager 7046
‡after 5 pm and weekends

Other Radiology phone numbers
Type 'PACS' into web browser
Click on 'CONTACTS'

IR Clinic
DCAM 2F
Mondays 8am - 5pm

Step 1 *Order "Outpatient Referral to Interventional Radiology" in Epic*
Step 2 *then either a) call (773) 702-6514 to schedule the appointment date/time or b) send Epic in-basket message to INTERVENTIONAL RAD CLN TRIAGE (11142)*

Ordering a procedure (inpatient or outpatient)
Place an order in Epic and provide relevant details or specific requests in the field titled "Clinical question to be answered". If patient is not consentable, include name and contact info for surrogate. Epic orders are reviewed during business hours. Approved procedures are added onto the schedule based on medical urgency and schedule availability. Procedures requiring General Anesthesia are scheduled based on availability of Anesthesia Service.

5 C's: Coags, Creatinine, Contrast allergy, Consent, Cuisine

Low Risk

* = exceptions

Line Removal
Drain Exchange
Dialysis Shunts
Tunneled line
Port placement/removal
Tunneled drainage cath
Venography
IVC Filter placement
IVC Filter out uncomplicated
Superficial drain/bx
Thora/Para
TJ liver bx*
Arterial interventions*
< 6f, embolization

Do not check INR/PT unless risk of bleeding
INR ≤ 2.0-3.0
*For Arterial:
Femoral access < 1.8;
Radial access < 2.2
Plt > 20,000
*For TJ liver bx:
Plt >30,000

Do not hold Anticoag or AntiPlt except:
Warfarin INR < 3
Abciximab 24 hours
Eptifibatide/Tirofiban
4 - 8 hours

High Risk

Ablations
Arterial Interventions
Biliary drains
Thrombolysis cath directed
Deep abscess drain
Deep nonoragan bx
g/gj tube placement
IVC filter removal complex
Portal vein interventions
Solid organ bx
Kyphoplasty
TIPS
Neph tube
Intrathoraic venous

Coags
INR ≤ 1.5-1.8
plt > 50,000

Anticoagulation
UFH 4 - 6 hours
Lovenox 6 - 8 hours
Apixaban:
GFR >50 4 doses
GFR 30-50 6-8 doses
Rivaroxaban:
GFR >30 2 doses
GFR<30 3 doses
Clopidogrel 5 days
Aspirin 3 - 5 days

Derived from "Standards of Practice. Society of Interventional Radiology Consensus Guidelines for the Periprocedural Management of Thrombotic and Bleeding Risk in Patients Undergoing Percutaneous Image-Guided Interventions. JVIR 2019 30:1168–1184"

Discontinuing anticoagulation

Hold anticoagulants x 4 ½-lives

Lovenox: hold 24 hrs
Arixtra: hold 2-3 days
Pradaxa: hold 2-3 days
Eliquis: hold 24 hrs
Coumadin: hold 3-5 days (depending on INR), bridge to lovenox, hold lovenox x 24 hrs

Plavix: hold 5 days
Brilinta: hold 5 days

Resuming anticoagulation

Withhold all anticoagulation for at least 24 hrs if clinical condition permits

Tunneled line placement

(-) blood cultures x 48 hrs

Occluded catheter

•tPA (2 mg in 2 mL saline)
•Slowly infuse catheter
•Let sit x 30 min
•Aspirate & flush w/ saline
•Repeat x 1 if needed

G-tubes

Balloon "push" → use next AM

Mushroom "pull" → use in 4 hrs

Biopsies

CT-guided or transjugular → IR (2-6514)
US-guided → Abdominal radiology (2-4518)
Bone/muscle → MSK radiology (2-4518)
Spine/head&neck → Neuroradiology (5-8044)
Breast → Mammography (4-9760)

NPO

6 hrs if patient to receive moderate sedation (fentanyl & midazolam)
8 hrs if general anesthesia

Renal Insufficiency

•1cc/kg/hr NS IV 12 hrs prior and after; encourage oral intake
•Sodium bicarb drip 1cc/kg/hr 154 mEq/L @ 1 hr pre to 6 hrs post

Contrast Premedication*

•Methylprednisolone 32 mg PO @ 12 hrs and 2 hrs prior
•Emergent: hydrocortisone 200 mg IV plus 50 mg benadryl @ 1 hr prior; minimum of 2 doses of hydrocortisone 4 hrs apart
*Search "contrast allergy" order set in Epic

Criteria for drain removal (any one)

•Improvement in clinical condition
- Defervescence
- Improving leukocytosis
•Catheter output <10 cc/day
- Flush 5 cc BID if suspect occlusion
•Follow-up imaging

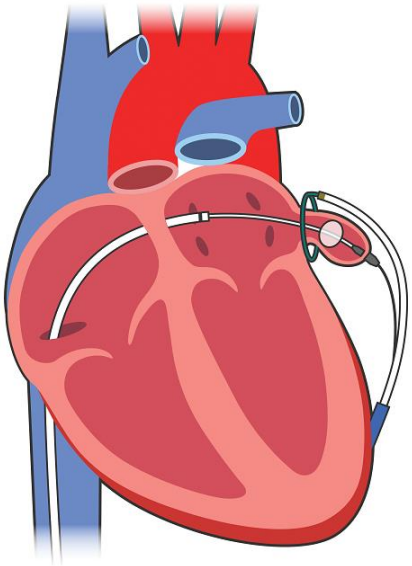
Thoracentesis, paracentesis, PICC

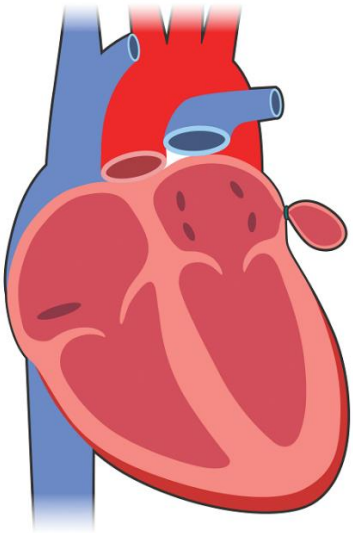
•**Procedure service *only*** (pager 1111)
•If failed attempt by procedure service: order ultrasound and request marking of site for optimal drainage and re-consult procedure service

AT THE FOREFRONT
UChicago Medicine

The Center for
Clinical Professional Practice

Left Atrial Appendage Closure Using Ligation Tip Sheet





Key Points

- What is Left Atrial Appendage (LAA) Ligation?
  A type of Left Atrial Appendage Closure that is done via ligation (tie or sew closed) to prevent entry of blood into the LAA. It's minimally invasive procedure done via robotic-assisted with general anesthesia
- Purpose
  By closing the left atrial appendage, blood cannot pool in the appendage causing clots to form.
- Who is eligible?
  - Patients who are not able to have the Watchman/Amulet device implanted via transfemoral may be a good candidate
  - Patients with non-valvular atrial fibrillation
  - History of bleeding (GI, intracerebral, subdural, retro-peritoneal, epistaxis), increased risk of bleeding (thrombocytopenia, cancer, or risk of tumor associate bleeding), poor compliance with anticoagulation therapy, difficulty maintaining therapeutic INR range, high risk of recurrent falls, cognitive impairment, severe renal failure, occupation related to high bleeding risk, and need for prolonged dual anti-platelet therapy.
  - Also, must meet criteria of a CHA2 DS2 VASc score of greater than or equal to 3

- Contraindications
  - Left atrial appendage thrombus
  - Active cardiac infection (endocarditis)
  - Inadequate anatomy that would interfere with other structures of the heart
- Access

- Robotic-Assisted:
  - Usually 3 to 4 small, dime-size incisions are made on the left side of the chest for entry of thoracoscope and additional ports
  - Chest tube place after procedure

Pre-Op

- Ensure labs and blood band is completed
- Antibiotics are started per order
- Baseline physical exam is complete, including neuro. assessment

Recovery

Prompt recognition of postoperative neurologic events, cardiac arrhythmias, renal failure, vascular complications and hemorrhage are critical

- In addition to PACU Standard Assessment, vital signs (including rhythm), pain score, neuro., vascular, and site must be assessed per order frequency
- Chest Tube Management (patient will have a small chest tube placed after the procedure)
- Extended PACU Time is 4 hours, unless admitted to ICU *(**PACU Orders should reflect extended time**)*
- Stable patients are transferred to 4C

Important Contacts:

- Jennifer Smazil, FNP
  - Ext. 2-8438
  - pager: 1918
  - Email: Jennifer.Smazil@uchospitals.edu
- Atman Shah, M.D.
  - Office: 4-7176
  - Pager: 5469
  - Email: ashah@bsd.uchicago.edu
- Sandeep Nathan, M.D.
  - Office: 2-1928
  - Pager: 1928
  - Email: snathan@medicine.bsd.uchicago.edu
- John Blair, M.D.
  - Office: 4-9137
  - Pager: 7919
  - Email: jblair2@medicine.bsd.uchicago.edu

AT THE FOREFRONT
UChicago Medicine

The Center for Clinical Professional Practice

- Rohan Kalathiya, M.D.
  - Office: 4-6853
  - Pager: 3162
  - Email: Rohan.Kalathiya@uchospitals.edu

Malignant Hyperthermia in PACU Tip Sheet

Key Points

- Malignant Hyperthermia (MH) is an rare, inherited genetic disorder of the skeletal muscles that is usually triggered by certain halogenated anesthetic gases with or without administration of muscle relaxant, succinylcholine
  - The uncontrolled release of calcium from the skeletal muscle cells results in sustained muscle contraction
- MH has an acute and rapidly progressive onset
  - It usually occurs during anesthesia induction, possibly 2-3 hours after induction and **within the 1st hour in PACU.**
- MH crisis does not necessarily occur every time an MH susceptible patient is exposed to an triggering agent
- Reaction occurs more often in males vs females; 45%-52% occurs in those 19 years or younger

MH Triggering Agents

- Volatile Anesthetic Agents (desflurane, sevoflurane, isoflurane, halothane, enflurane) with/without administration of succinylcholine

Signs & Symptoms

- Unexplained high end-tidal carbon dioxide (ETCO2), tachypnea, sinus tachycardia, generalized muscle rigidity or masseter
- Later onset-hyperthermia (occurs as early as 15 minutes after onset of MH)

PACU Treatment *(initiate treatment immediately after suspected MH crisis)*

- Primary Nurse remain with the patient and call for assistance (MH & Crash Cart); Hyperventilate patient with 100% O2 at 10 l/min via ambu bag until anesthesia provider arrives for airway management

- Charge Nurse will call OR Charge Nurse to retrieve MH Cart and delegate roles
  - **Location of MH Cart**
    - **<u>CCD OR</u>**
    - Central Core Outside OR 18
    - Charge RN #5-4608

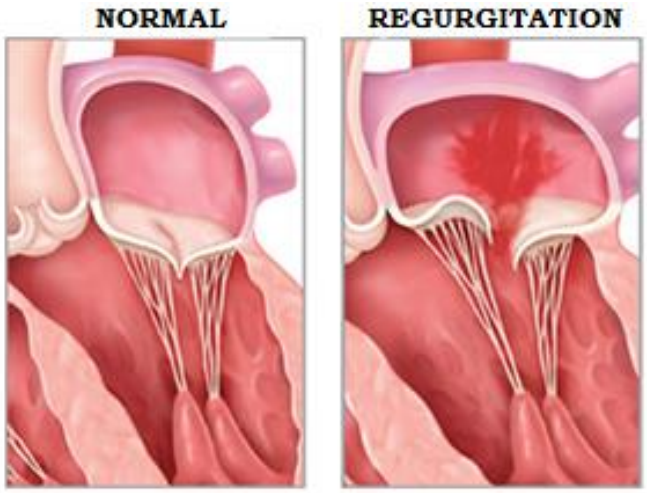
Tip sheets are only used as educational reference.
Always refer to UCM Intranet for policy and protocol, treatment orders, and Lexicomp

12/2023 T.Rice

- Assign 2-3 Nurses to reconstitute **Revonto (dantrolene sodium):** administer immediately
    - Acts as skeletal muscle relaxant used to treat hypermetabolism during a MH Crisis
    - Reconstitute with 60 preservative-free sterile water. Shake ~ 20 seconds
    - Initial dose is 2.5mg/kg RAPID IV Push and repeat continuously until symptoms subside
    - Post MH- 1mg/kg every 4-6 hours by bolus or 0.25mg/kg/hr. by infusion for a minimal of 24 hours
    - Has mannitol (Don't give Lasix)
- Assign nurse to start a peripheral iv if needed
- Assign a staff member to collect ice to start cooling measures
    - Apply ice packs to groin, axillae, and head
- Assign a nurse to hang cool iv fluids (located in MH Cart)
- Call MHAUS 1-800-644-9737 (Anesthesia provider)

- Monitor temperature closely- Stop cooling measure when temp. is < 100°F (38 °C)
- Insert foley catheter, monitor urine output
- Send labs (ABG, electrolytes, creatinine kinase (ck), serum/urine myoglobin, and coagulation
- Treat dysrhythmias *(Do not treat dysrhythmias with calcium channel blocking agents)*
- Treat Hyperkalemia:
    - **I**nsulin/Glucose
        - **Pediatrics-**Regular Insulin 0.1 units/kg IV; 25% Glucose 2ml/kg IV
        - **Adults-**Regular Insulin 10 units IV; 50% Glucose 2ml/kg IV
    - Calcium Chloride 10mg/kg or Calcium Gluconate 10-50mg/kg
    - Nebulized Albuterol 4mg
- Bicarbonate 1-2 meq/kg IV (if ABG shows metabolic acidosis)
- Prepare patient for transfer to ICU to continued monitoring and care

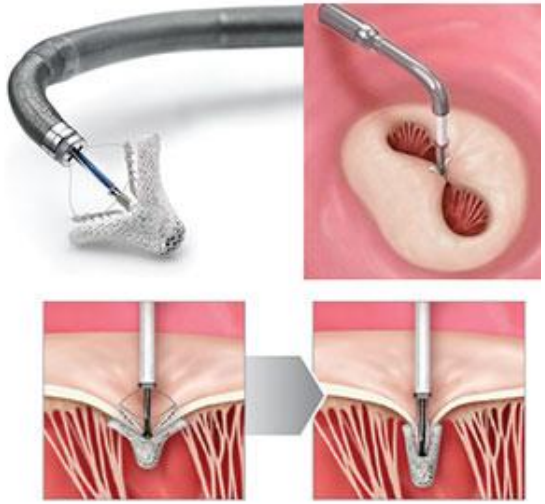
Mitral Clip



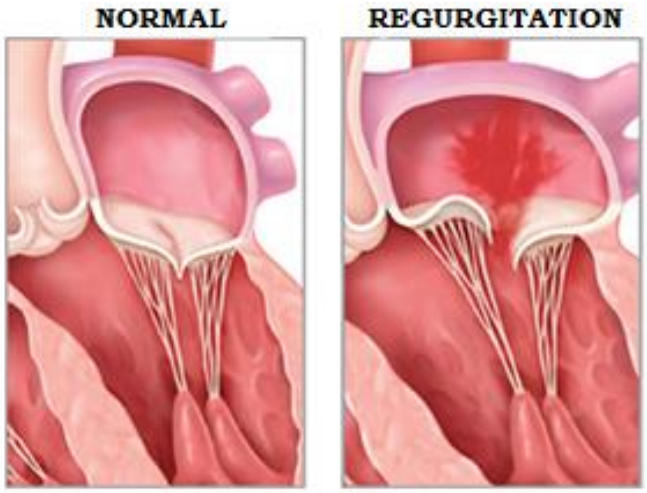
- **Why is this done?**
- Patient's with significant mitral regurgitation who are deemed too high risk for traditional surgical mitral valve treatments (surgical repair or surgical replacement)

- **Who is eligible?**
- Patients with symptomatic (SOB, fatigue, dizziness, LE edema) mitral regurgitation

- **Contraindications**
- Flail leaflets
- Infective endocarditis
- Rheumatic mitral valve disease
- IVC thrombus
- Inability to tolerate anti-platelets post-procedure
-
- **Procedural considerations**
- GA cases with TEE guidance
- Trans-septal puncture for device delivery
- 26F sheath in femoral vein
-
- **Post-Procedure Care**
- Bedrest for 4 hours after procedure
- NPO until anesthesia approves
- Transthoracic echo next day
- Patient starts asa/plavix daily



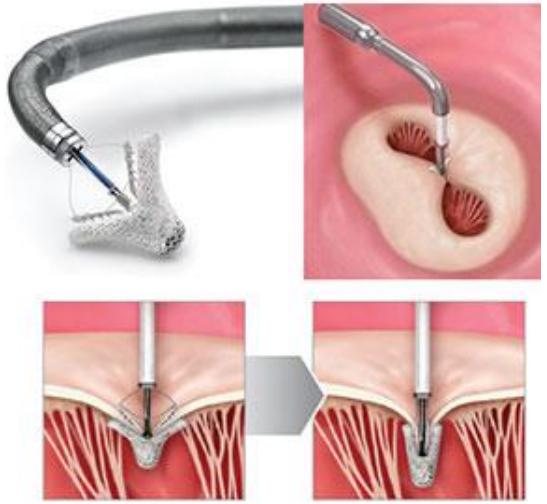
Mitral Clip



- **Why is this done?**
- Patient's with significant mitral regurgitation who are deemed too high risk for traditional surgical mitral valve treatments (surgical repair or surgical replacement)

- **Who is eligible?**
- Patients with symptomatic (SOB, fatigue, dizziness, LE edema) mitral regurgitation

- **Contraindications**
- Flail leaflets
- Infective endocarditis
- Rheumatic mitral valve disease
- IVC thrombus
- Inability to tolerate anti-platelets post-procedure
-
- **Procedural considerations**
- GA cases with TEE guidance
- Trans-septal puncture for device delivery
- 26F sheath in femoral vein
-
- **Post-Procedure Care**
- Bedrest for 4 hours after procedure
- NPO until anesthesia approves
- Transthoracic echo next day
- Patient starts asa/plavix daily



AT THE FOREFRONT
UChicago Medicine

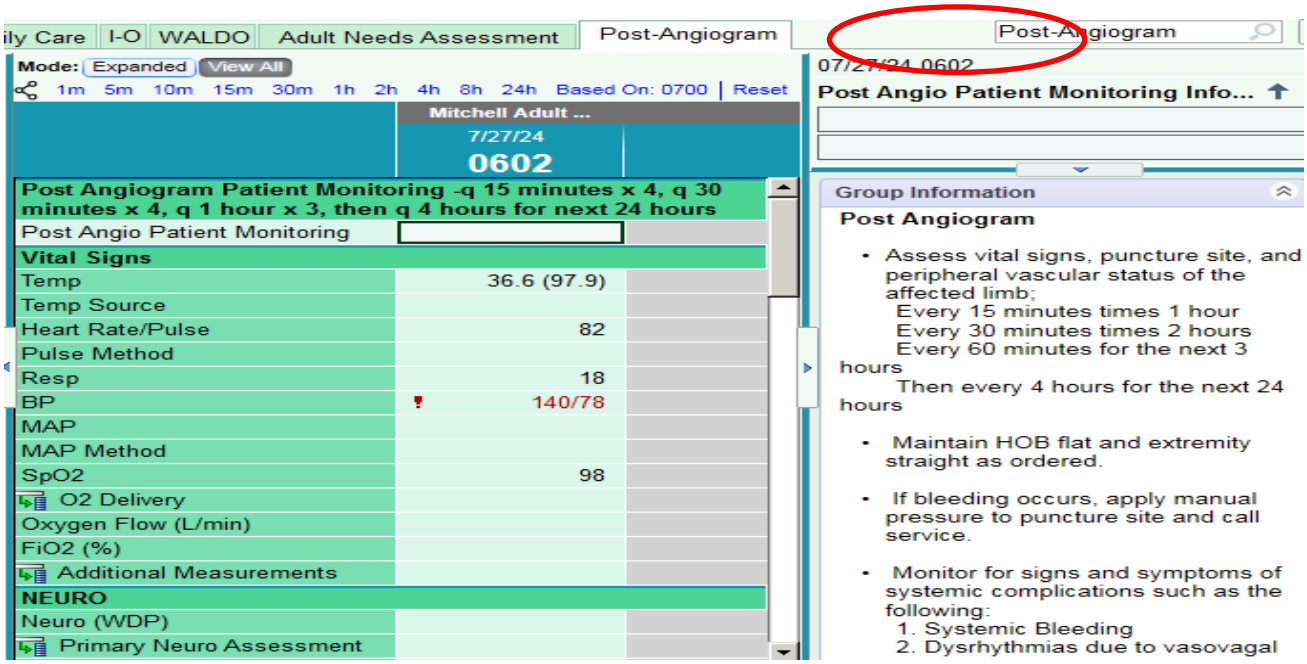
Post Thrombectomy/ Post-Angiogram: Assessment & Charting Guidelines

- **Monitor blood pressure and neurological assessments on all patients post thrombectomy:**
  - Every 15 minutes for 2 hours, then
  - Every 30 minutes for 6 hours, then
  - Every 60 minutes for the next 16 hours

- **Following arterial catheter removal, assess vital signs, puncture site, and pheripherial vascular status of the affected limb:**
  - Every 15 minutes x 4
  - Every 30 minutes x 4
  - Every 60 minutes x3

  ✓ Check for bleeding, hematoma
  ✓ Check for peripheral pulses, color, temperature of affected extremity
  ✓ Check extremity for movement, sensation, pain

⇨**Don't forget to wrench in the Post-Angiogram Flowsheet**



Updated 11/14/19 H. Amir

AT THE FOREFRONT
UChicago Medicine

Complications after Femoral Artery Access

- Hematoma- look for raised area over groin access site, painful (bleeding under the skin)

  Treated with pressure over access site, prolonged bedrest

- Psuedoaneursym- outpouching of arterial wall

  Painful pulsatile mass

  Treatment- generally conservative, occasional vascular lab compression

- A/V fistula- communication between artery and vein

  May note thrill or bruit; site may be painful

  Treatment- usually vascular lab for compression, serial vascular studies

- Retroperitoneal Bleed- caused with injury to vessel that allows bleeding into peritoneal space

s/s- hypotension, tachycardia, pain, pallor, back pain, altered mental status

Medical emergency- transfusion, ICU, often surgical intervention required

Complication after Radial Artery Access

- Hematoma- usually very painful, raised lump over access site

  Apply pressure to area

- Radial artery thrombus- usually from prolonged TR band application

  Look for loss of arterial waveform on thumb

Does/Don’ts of sheath care

Do not allow your patient to ambulate with a sheath; keep head of bed 30 degrees or less

Do not connect arterial sheath to pressure bag; keep dressing in place- fellow will remove when ACT < 180 (lab value that fellow with check)

Do have suture removal kit, gauze and tegaderm at the bedside

Do call with any questions or concern (cath lab charge nurse 68757)

Complications after Femoral Artery Access

Hematoma- look for raised area over groin access site, painful (bleeding under the skin)
- Treated with pressure over access site, prolonged bedrest

Psuedoaneursym- outpouching of arterial wall
- Painful pulsitale mass
- Treatment- generally conservative, occasional vascular lab compression

A/V fistula- communication between artery and vein
- May note thrill or bruit; site may be painful
- Treatment- usually vascular lab for compression, serial vascular studies

Retroperitoneal Bleed- caused with injury to vessel that allows bleeding into peritoneal Space
- s/s- hypotension, tachycardia, pain, pallor, back pain, altered mental status
- medical emergency- transfusion, ICU, often surgical intervention required

Complication after Radial Artery Access

Hematoma- usually very painful, raised lump over access site
- Apply pressure to area

Radial artery thrombus- usually from prolonged TR band application
- Look for lose of arterial waveform on thumb

Possible Complications after any Invasive Cardiac Procedure

For all access- change in assessment of pulses may be first clue of complication
Myocardial Infarction- usually related to acute stent thrombosis
Stroke
Allergic reaction (usually related to contrast agent)
Arrhythmias
Vasovagal-will see sudden drop in BP, dizziness, pt cold/clammy
- usually related with sheath removal/femoral pressure
- Usually response to fluid bolus, atroprine

Contrast Induced Neuropathy- important to hydrate patient after procedure
Infection at access site

Care of Femoral Sheaths after Cardiac Catheterization Procedures

Types of Sheaths

Venous sheaths- used for right heart studies, structural heart cases (such as PFO or ASD closure)

Arterial sheath- used for all coronary and peripheral cases

- Retrograde- sheath is going up, toward the heart (98% of cases)
- Antegrade- sheath is pointing down, towards the leg- peripheral cases

Closure Methods

Arterial Closure devices

- Angioseal- collagen plug
- Boomerang- allows access site to "shrink down" to small hole
- Perclose- arterial access stitched shut

- Manual pressure- bedrest six hours (if not closure device)
  - Sheath will be removed by cath lab staff/fellow at bedside

Venous access- manual pressure (no closure device option)

Length of Bedrest

Venous sheaths

- Bedrest – 2 hours
- If received anticoagulation – 4 hours

Arterial sheaths

- Angioseal- 2 hours
- Boomerang- 2 – 3 hours
- Perclose- 2 hours
- Manual pressure- 6 hours (bedrest starts when sheath removed)
- (if bleeding or complications, length of bedrest may be extended)

Reasons patients may not receive closure device

- Severe PAD
- Need for repeat procedures in near future/surgery
- Elevated ACT with poor anatomy for closure device

Care of Radial Access after Cardiac Catheterization Procedures

TR Band

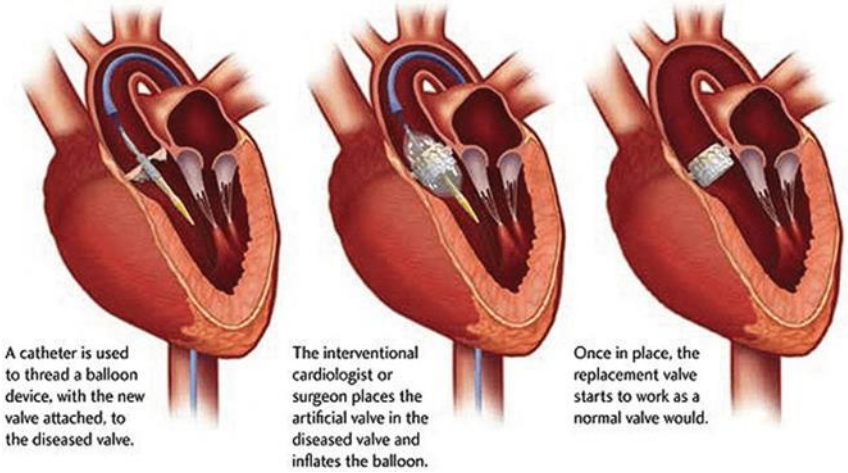
- 2 hours if no anticoagulation
- 4 hours if received anticouglation
- Bedrest for 2 hours after case (to allow sedation to wear off)

Do call with any questions or concern (cath lab charge phone: 68757)

AT THE FOREFRONT
UChicago Medicine

The Center for Clinical Professional Practice

TAVR (Transcatheter Aortic Valve Replacement) Tip Sheet



Key Points

- What is TAVR?
  It is a minimally invasive procedure mainly done through a transfemoral approach that uses a delivery system to replace a heavily calcified, poorly functioning aortic valve with a brand new valve.
- Why is it done?
  - To treat patients with significant aortic valve stenosis who are deemed intermediate to high risk for traditional surgical aortic valve replacement (SAVR).
- Who is eligible?
  - Patients who are diagnosed with severe aortic stenosis.
  - Criteria of diagnosis is based on echocardiogram imaging and symptoms such as SOB, fatigue, chest pain, syncope, dizziness, lightheadedness, LE edema, orthopnea, and palpitations.
- Goal
  - Restore normal blood flow to the body with hope of reversing decreased heart function, and relief of patient's symptoms to overall improve quality of life.
- Vascular Access
  - Most common arterial access sites:
    - Femoral Artery
    - Radial Artery
  - Most common venous access sites:
    - Internal Jugular
    - Femoral Vein

For education refresher, please self-enroll into TAVR Course in Absorb LMS

AT THE FOREFRONT UChicago Medicine

The Center for Clinical Professional Practice

Pre-Op

- Ensure labs and blood band is completed
- Antibiotics are started per order
- Baseline physical exam is complete, including neuro. assessment
- Patient may be ordered Plavix

Recovery

Prompt recognition of postoperative neurologic events, cardiac arrhythmias, renal failure, vascular complications and hemorrhage are critical

- In addition to PACU Standard Assessment, vital signs (including rhythm), pain score, neuro., vascular, and site must be assessed per order frequency
- Bedrest restriction; HOB < 30 degrees if femoral sheath is in place
- Extended PACU Time is 4 hours, unless admitted to ICU *(**PACU Orders should reflect extended time**)*
- Stable patients are transferred to 4C

Important Contacts:

- Jennifer Smazil, FNP
  - Ext. 2-8438
  - pager: 1918
  - Email: Jennifer.Smazil@uchospitals.edu
- Atman Shah, M.D.
  - Office: 4-7176
  - Pager: 5469
  - Email: ashah@bsd.uchicago.edu
- Sandeep Nathan, M.D.
  - Office: 2-1928
  - Pager: 1928
  - Email: snathan@medicine.bsd.uchicago.edu
- John Blair, M.D.
  - Office: 4-9137
  - Pager: 7919
  - Email: jblair2@medicine.bsd.uchicago.edu
- Rohan Kalathiya, M.D.
  - Office: 4-6853
  - Pager: 3162
  - Email: Rohan.Kalathiya@uchospitals.edu

Epic Tip Sheet: Beaker
Ordering Microbiology Speciation and Susceptibilities for Providers

Summary

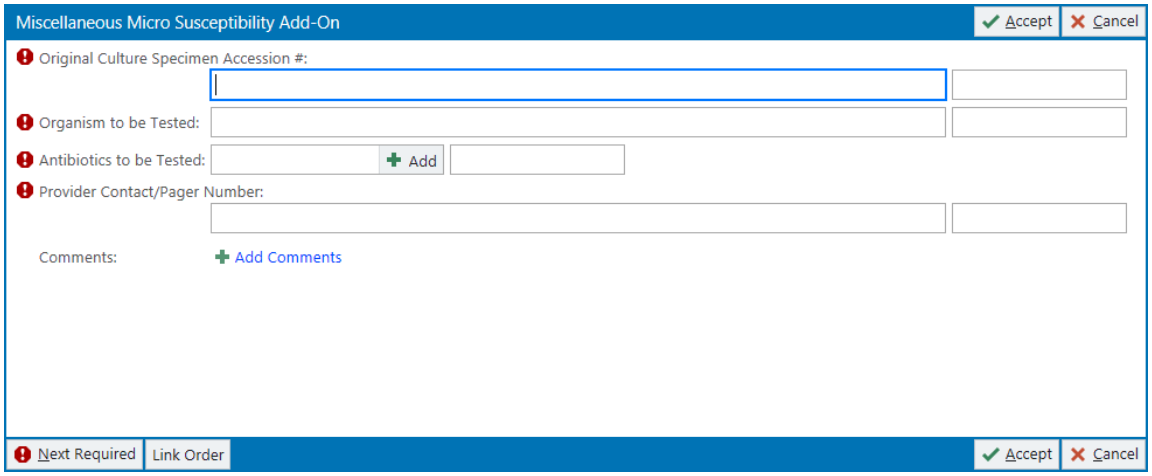
In cases where additional speciation or susceptibility testing of organisms in culture is warranted, use the workflow below to place an add-on order for the Clinical Microbiology laboratory to document your request.

Step-by-Step

> ! This workflow should **ONLY** be used in cases of Susceptibility or Speciation Add-Ons.
> For culture add-ons (ex: AFB Culture & Stain) use the regular Add-On Workflow by placing an order and adding on to an existing specimen.

Microbiology: Susceptibility Add-On

1. In the Visit Taskbar or Manage Orders, place an order for the Miscellaneous Micro Susceptibility Add-On (Px Code: **LABMCMISUB**)
2. In the order, answer the applicable order questions:



   a. Enter the **Original Culture Accession #** that can be found in Chart Review for the original order here:

b. Enter the name of the **Organism to be Tested** (ex: *E. coli, E. cloacae, S. aureus*, etc.)

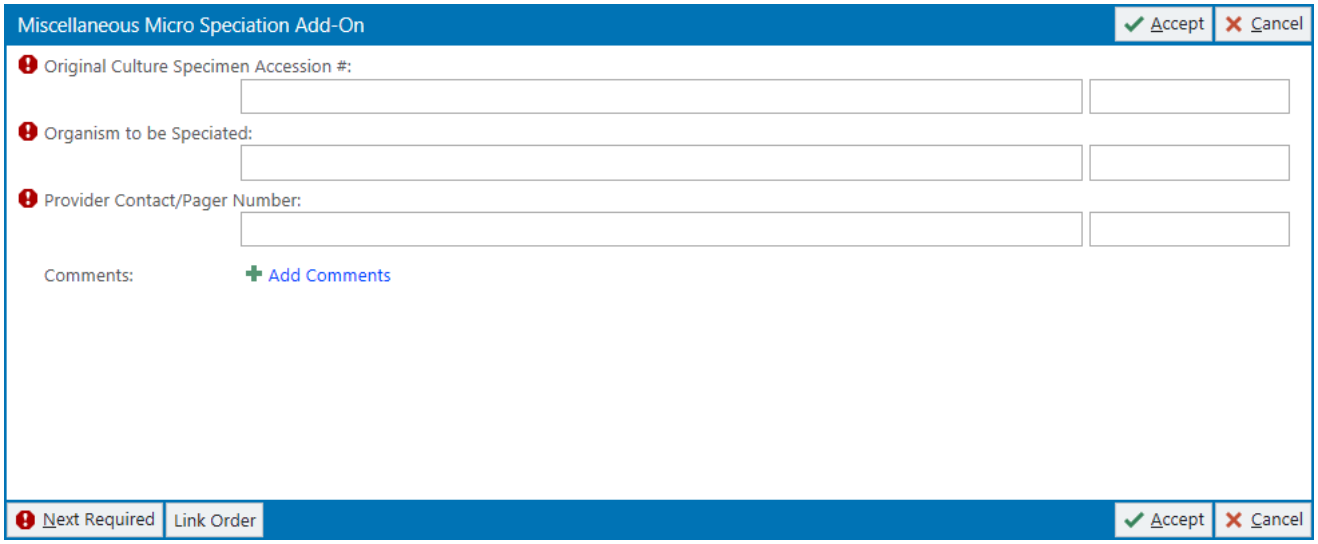
c. In **Antibiotics to be Tested**, enter the requested drugs using the ✚ **Add** field or if generic susceptibilities are requested, use the comments field to the right of the **Add** button to free-text the request.

d. In the **Provider Contact/Pager Number**, enter a contact number for yourself or a member of your team so if the Micro lab has questions about the request, they can easily reach you.

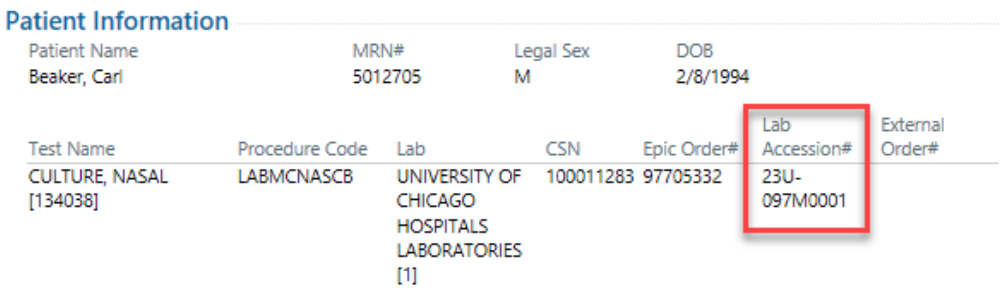
3. Click ✔ **Accept**
4. ✔ **Sign** the order.

Microbiology: Speciation Add-On

1. In the Visit Taskbar or Manage Orders, place an order for the Miscellaneous Micro Speciation Add-On (Px Code: **LABMCMISPEB**)
2. In the order, answer the applicable order questions:



a. Enter the **Original Culture Accession #** that can be found in Chart Review for the original order here:



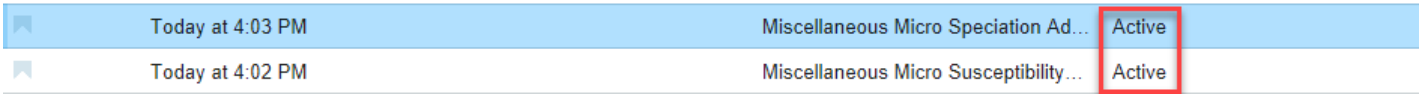
b. In the **Organism to be Speciated** field, enter the name of the organism or generic name of the organism(s) you want speciated (ex: Gram positive bacilli, *Corynebacterium* species, etc.)

c. In the **Provider Contact/Pager Number**, enter a contact number for yourself or a member of your team so if the Micro lab has questions about the request, they can easily reach you.

5. Click ✔ **Accept**
6. ✔ **Sign** the order.

Viewing the Status of your Add-On

1. In Chart Review, the status of the Miscellaneous Micro Add-On will update based on when the lab acknowledges the order. When the order is first placed, the status will be listed as **Active**.



2. Once the order is acknowledged by the lab staff, the order will transition into an **In Process** status.
3. The results for the requested speciation and/or susceptibility will appear on the original culture order.

Epic Tip Sheet: Beaker
Ordering Microbiology Speciation and Susceptibilities for Providers

Date	Summary of Revisions	User
5/22/23	New Tip Sheet	Steph Gillen