PACU Pre-Learning Addendum

Contents

Ambulatory/Outpatient Admission Data

For additional information refer to full Policy: *Ambulatory/Outpatient Admission Data* in PolicyStat

Admission Assessment

1. Vital signs including, temperature (T), pulse (P), respiratory rate (R), blood pressure (BP), age, height, and weight for all patients, O2 saturations and NPO status.

Patient Profile

2. Mutuality (patient and family individual preferences) – care plan
3. Health history and review of systems
4. Advance Directives – pre-op checklist
5. Contact information for discharge

Patient Education

6. Learning assessment including preferred language
7. Education needs as appropriate
8. Initial cognitive, cardiac, respiratory (including STOP BANG for sleep apnea), procedure and patient specific assessment, and pain assessment

i. Risk assessments for falls, violence in the home, safety, latex sensitivity and pregnancy

ii. Review and validation of prior-to-admission medications, allergies, substance use (including tobacco & alcohol use), history and physical by LIP and verification of consent.

A. *Adult Patient*: Person 18 years of age and older.
B. *Pediatric Patient:* Person 1-17 years of age.
C. *Neonatal Patient*: Person less than one year of age.
D. *Ambulatory/Outpatient Procedure*: Health services provided to individuals who are not confined to institutional beds as inpatients during the time services are rendered.

POLICY:

For outpatient procedures, the RN is responsible for completion of the Admission Assessment, Patient Profile and Patient Education. If data were collected in a pre-surgical services setting, the RN is responsible to review and update as necessary.

If the required data on the Patient Profile cannot be collected or reviewed, the goal/outcome evaluation documented by the RN will serve to reflect the patient condition or unavailability that did not support data gathering. If the patient declines to provide information, the RN will document this as a significant event note.

If the patient transfers and the level of care remains the same, the documentation requirements do not change. The level of care, not the physical setting, dictates the documentation requirements. For example, an adult ambulatory patient transferred to a medical-surgical unit for several hours of post-anesthesia recovery remains at the same level of care as an ambulatory patient whose recovery is completed in a surgical short stay unit. If the patient's level of care changes, the admission data defined for the new level of care must be completed within 24 hours.

Certified Nursing Assistants and other interdisciplinary professionals may collect and document admission data within their scope of practice.

The RN is responsible to integrate admission data into an individualized plan of care.

Ambulatory/Outpatient Admission Data (cont)

Patient Profile & Patient Care Summary – Required Data Elements

Patient Profile		Adult	Pediatrics	OB	Out patient
Group	**Question**				
General Information	Language Assistance	X	X	X	X
Advance Directives	Advance Directives (Medical Healthcare)	X	X	X	X
Current Health	Anticipated Changes Related to Illness	X			
	Services Anticipated at Discharge	X	X		X
	Anticipated Discharge Disposition	X	X		X
Mutuality/Individual Preferences	What anxieties, fears or concerns do you have about your health or care?	X		X	X
	What questions/concerns do you/child have about you/your child's health or care?		X		
Nutrition Risk Screen	Nutrition Risk Screen	X			
Functional Level Prior	Change in Functional Status Since Onset of Current Illness/Injury	X			
Functional Level Current	Swallowing	X			
Abuse Screen	Do you feel that you are treated well by your partner/spouse/family member?	X		X	X
	Do you feel you are treated well by your family/friends/significant others?		X		
	Do you feel unsafe going back to the place you are living?	X	X	X	
Mood Disorder Screening to Assess Suicide Risk	PHQ-4 Total	X		X	
Pediatric Suicide Risk Screen	PHQ-4 Total		X		
Immunization Screen	Have you ever had a vaccine for pneumonia?	X		X	
	Have you ever had a vaccine for influenza?				
Latex Screen	Latex Screen Positive?	X		X	X
Pain	Preferred Pain Scale	X	X	X	X
	Acceptable Comfort Level	X	X	X	X
Chronic Pain	Chronic Pain	X	X	X	
Values/Beliefs/Spiritual Care	Cultural, Spiritual, Religious Practices Important for Staff to Know	X	X	X	X
Patient Care Summary		**Adult**	**Pediatrics**	**OB**	**Out Patient**
PHS Fall Risk Factors	At Risk for Falls?	X	X	X	X
Nutrition Risk Screen	Nutrition Risk Screen	X		X	
Pain/Comfort (Pediatrics)	Observed/Reported Pain		X		
Skin	Braden	X		X	X
	Braden Q		X	X	
Functional Level Current	Swallowing			X	

Perioperative Electronic Minimum Documentation

For additional information refer to full Policy: *Perioperative Electronic Minimum Documentation* in PolicyStat

The intra-operative nurse reviews the patient's chart to complete the pre-op assessment. Important elements that need to be addressed include:

1. NPO Status, Advanced Directive, Patient Chart Verification, Procedure and site verification, Regional Blocks, Medications, Beta Blockers

The intra-op nurse will document Event Times:

1. Set-up start (optional per ministry).
2. Ready for patient.
3. Enter under staff, the surgeon, anesthesia, and other licensed personnel that are participating in the care of the patient for the case.
4. Enter surgeon in and out times, especially when there is more than one surgeon, one following the other.
5. Enter anyone observing (students, reps, visitors) In and Out times – must be utilized to provide a clear picture of responsible staff in the room that are caring for the patient. Relief staff must have in and out times documented.

The intra-op nurse will document all sponge, instrument, needle and miscellaneous counts according to policy.

Additional documentation required

E. Pre-op Skin
F. Patient Belongings
G. Safe Surgery Checklist
H. Equipment
I. Patient positioning
J. Site Prep
K. Lines/Drains (LDA) can be defined as any device inserted into or added to the patient.
L. Procedures
M. Supplies
N. Intra-op Meds
O. Implants
P. Orders
Q. Order Sets
R. Acknowledge/Collect
S. Specimen Collection Status
T. Point of care testing
U. Specimens
V. Site Completion
W. Post-op Skin Condition must be recorded
X. Handoff Staff: Care Handoff – Complete the following fields if used in your ministry:
Y. PNDS – Documentation is only required if something other than the expected outcomes occur.
Z. Verify - The intra-op nurse is required to authenticate that all documentation has been completed.
AA. Professional Exchange – does not require documentation, but can be utilized to give report.

Universal Protocol

For additional information refer to full Policy: *Universal Protocol for Invasive Procedures* in PolicyStat

SAFE SURGERY CHECKLIST: PROVIDENCE OREGON		
BRIEFING	**TIMEOUT**	**DEBRIEF**
Verify prior to induction of Anesthesia	**Immediately before procedure start. All team members *suspend activity* & verbally participate.**	**At the end of the case and before the SURGEON leaves the OR.**
Before patient enters OR, CIRCULATOR confirms: ❑ Room thermostat temperature confirmed ❑ Implants / Specials are available	**SURGEON / PROCEDURALIST leads the timeout & begins by stating:** ❑ Patient Name ❑ Procedure planned	**CIRCULATOR confirms with SURGEON:** ❑ Counts are correct ❑ Actual procedure performed
Upon patient entry to OR, CIRCULATOR & SCRUB pause and verify: ❑ Patient identified using 2 unique identifiers matched to consent ❑ Procedure & laterality confirmed with patient & matched to consent ❑ Site marking confirmed per policy ❑ Allergies verified ❑ Active warming / SCD devices available	❑ Laterality * ❑ Confirms visible site marking * ❑ Confirms review of recent labs and display of relevant images *	❑ Wound class ❑ Specimens verified and labeled
	ANESTHESIA PROVIDER states: ❑ Antibiotic given * ❑ Patient glucose *	**ANESTHESIA PROVIDER confirms with SURGEON:** ❑ Estimated blood loss (EBL) ❑ Patient glucose *
	SCRUB continues by stating: ❑ Instruments ready & medications labeled ❑ Confirms plan for management of heat generating devices, including cautery holster location	**SCRUB verifies with CIRCULATOR:** ❑ Local medication administered ❑ Implanted items
CIRCULATOR & ANESTHESIA PROVIDER verify: ❑ Special anesthesia equipment present ❑ Blood product availability addressed *	**CIRCULATOR continues by stating:** ❑ Patient name & procedure match consent form ❑ Are there any other concerns? ❑ **"THE TIMEOUT IS COMPLETE"** Note: A colored towel covers the instrument tray until the CIRCULATOR states that the "TIMEOUT IS COMPLETE"	* *as applicable by policy, protocol or procedure* 

Process for site marking, all invasive procedures:

- The Proceduralist marks the site prior to surgery/invasive procedure.
- The site is marked with patient involved, awake and aware, if possible.
- The marking pen ink will be sufficiently permanent to remain visible after skin prep and draping.
- The mark is made at or near the procedure site or the incision site.
- For sites below the neck, the site is marked with the Proceduralist's first and last name initials. If the Proceduralist's initials are "N.O." their middle initial needs to be included at the time the site is marked.
- For sites above the neck an arrow may be used to point to the intended incision or insertion point.
- For spinal procedures, the mark is made on the skin at the approximate spinal level intended for surgery. Laterality is indicated if intended for the procedure. Additional intraoperative internal marking techniques may be used to confirm the exact spinal level.
- For procedures with laterality of paired internal organs performed via a midline incision or laparoscopically, skin marking is required indicating the intended side.

Waste Anesthesia Gases

What are Waste Anesthesia Gases (WAG)?

- Small amounts of volatile anesthesia gases that leak from the patients anesthetic breather circuit in the air of operating rooms
- Leak from gas cylinders or anesthesia containers
- Exhaled by patients recovering from anesthesia

Who Could be Exposed to WAG?

Everyone working in the OR can be affected.

- Anesthesiologists
- Nurse anesthetists
- Surgical and obstetric nurses
- Operating room (OR) technicians
- Surgeons
- Anesthesia technicians
- Post-anesthesia care nurses
- Circulating nurse

What are the Health Effects of Exposure?

- Headache
- Irritability
- Fatigue
- Nausea
- Drowsiness
- Judgment impairment
- Liver and Kidney disorders
- Miscarriages

What if Anesthesia is Spilled?

If spill happens:

- <10 mL – no special handling other than remove other items away from spilled liquid. It evaporates quickly.
- 10 mL to 30 mL- quickly cover it with a impermeable material (blue chux or towel and cover with plastic bag) to prevent vapors from overwhelming the room and absorb the liquid.
- Large spill – > 30 mL - EVACUATE AREA and call "Code Orange Response Team" for clean up.
- Ensure proper use of PPE during clean-up -Gloves, goggles, face shields. Only help with clean up if trained to do so.

Manage disposal of liquid agents:

1. Once absorbed - Place absorbent or chux into a plastic bag, tie closed
2. Then place in a Yellow Hazmat Bag
3. Call EVS to transport and log waste into Hazardous Waste Storage area.

Passive Badge Monitoring

Semi Annual monitoring is recommended by OSHA.

An anesthesiologist, surgeon, or nurse working near patients head should wear a passive badge monitor for his or her shift.

Passive Badges are to be worn on the outside of clothing, in your breathing zone (in space between shoulders and nose) for their entire shift.

Find Out More!

Check out the following websites:

- OSHA - Guidelines for Waste Anesthesia Gases 296.1910.1200 http://www.osha.gov/dts/osta/anestheticgases/index.html
- CDC / NIOSH Workplace – http://www.cdc.gov/niosh/docs/2007-151/pdfs/2007-151.pdf

Consent and Refusal of Consent for Procedures

For additional information (including age of consent, competence, and allowed disclosures refer to full Policy: *Consent and Refusal of Consent for Procedures* in PolicyStat

Medical Center Staff Responsibility

1. Informed Consent (PARQ) is the responsibility of the provider.
2. Informed Consent (PARQ) must occur before the hospital consent form is signed.
3. The initial Informed Consent, at times, may not be done by the actual performing proceduralist (i.e., OB Informed Consents may be done in the physician's office, but an on-call physician does the procedure).
4. The actual performing proceduralist, if different from the initial physician that provided the PARQ, must re-PARQ prior to the commencement of the procedure.
5. The Informed Consent must be documented prior to the commencement of the procedure but not necessarily prior to signing the consent form.

G. Documentation on the hospital consent form will include:

1. The name of the procedure(s) is/are entered on the consent form by the RN or provider.
2. The only acceptable source for transcribing the procedure is the provider order.
3. The procedure(s) shall be entered without using abbreviations.
4. Careful attention must be given to laterality; "right" and "left".
5. All physicians/proceduralists and LIPs performing significant procedures, as defined in the Professional Staff Bylaws, will have their name listed.
6. There must be a separate consent form signed EACH time a procedure is done.

Fire Safety in Surgical Services

For additional information refer to full Policy: *Fire Safety in Surgical Services* in PolicyStat

II. Response to Fires in the OR

A. In all cases of unexpected fire or smoke in the OR

a. The charge nurse will be contacted as quickly as is safely possible to activate the code red response team (dial 88, pull manual station if the fire alarm is not already activated) and alert other OR staff if deemed necessary.

b. The code red response team will meet the charge nurse or designee at a predetermined location outside the restricted area for briefing and determine the appropriate response.

III. Surgical Intubations-Extinguishing Airway Fires

A. At the first sign of an Airway or Breathing Circuit fire, be prepared to assist with any of the potential interventions, listed below, as deemed appropriate and directed by the attending physician.

a. Disconnect the breathing circuit from the tracheal tube.

b. Remove the tracheal tube:

1. Have another team member extinguish it using water/saline
2. Remove cuff-protective devices and any segments of burned tube that may remain smoldering in the airway
3. Stop the flow of gases to the airway
4. Pour saline or water into the airway
5. Care for the patient:
    1. Re-establish the airway and resume ventilating with air until certain that nothing is left burning in the airway; switch to 100% oxygen
    2. Examine the airway for the extent of damage and treat the patient accordingly
6. Save involved materials and devices for later investigation.

IV. Fires on the Surgical Patient

A. In the event of a small fire on the patient, immediately:

a. Cover and sweep small fires with water/saline soaked sponge/towel.

b. Remove the burning material from the patient.

c. Check for and remove any smoldering material from the OR,

d. Complete a Datix report.

B. In the event of a large fire or unexpected smoke:

a. Stop the flow of breathing gases to the patient.

b. Remove the burning material from the patient.

c. Have another team member extinguish the burning material with water/saline.

d. Care for the patient:

i. Resume ventilation

ii. Control bleeding.

iii. Evacuate patient to another smoke compartment, if indicated due to smoke or fire.

iv. Examine the patient for injuries and treat accordingly.

e. ONLY THE NURSE SUPERVISOR AND/OR THE DEPARTMENT MANAGER, OR THEIR AUTHORIZED DESIGNEE, WILL SHUT OFF MED GAS SERVING THE AREA THAT THEY MANAGE.

f. Complete a Datix report.

C. Save all items that are involved in the fire to facilitate the investigation.

a. Provide all items that are involved in the fire to quality/risk management personnel.

b. All fire events must be investigated and findings are reported to Safety/Environment of Care Committee.

V. Fire or smoke in the OR ***not involving a patient***:

A. Extinguish the fire using the appropriate fire extinguisher.

B. For fire involving equipment - if possible/practical disconnect equipment and remove from the OR for hand-off to the code response team.Do not leave extinguished equipment unattended.

C. Evaluate the status of the OR and proceed or prepare to evacuate the patient.

D. Complete a UOR

Malignant Hyperthermia

For additional informaino refer to full Policy: *Malignant Hyperthermia* in PolicyStat

C. Implementation of Protocols for an acute event:

1. Nurse or designee institutes emergency code as directed by anesthesia provider and/or physician.
2. Call RRT, Code Blue and/or main OR as appropriate per facility. Designated person brings malignant hyperthermia cart into room.
3. Nursing leadership and pharmacy are notified.
4. Assign additional support staff as necessary to assist anesthesia and circulator.
5. Contact the Malignant Hyperthermia Association of the United States (MHAUS) Hotline at (800) 644-9737 per anesthesia provider.

D. Treatment of Symptoms: Anticipate need for prescribed medications.

1. Dantrolene: Reconstitute (Dantrium/Revonto/Ryanodex)
    a. Locate on the malignant hyperthermia cart.
    b. Reconstitute only with preservative free sterile water, 2.5 mg/kg rapidly
    c. Shake Dantrium/Revonto vial well, until clear; Ryanodex is a suspension that does not clear.
    d. Repeat until signs of MH are reversed
2. Additional Medications: Prepare medications as required such as: sodium bicarbonate; IV glucose and insulin; calcium chloride; anti-arrhythmic agents. When Ryanodex is used, mannitol should be available.
3. Thermoregulation Measures:
    a. Obtain refrigerated saline or ice, if "patient cooling" is indicated.
    b. Use cold saline for I.V.'s. Note: Do not use IV Lactated Ringer's solution.
    c. Surface cooling may be indicated using ice, cold wet cloths, a hypothermia blanket and/or misting the patient with cool water per spray bottles. In addition a fan may be used to assist in the cooling process.
    d. Implement protective measures to prevent skin/tissue injury due to thermal sources.
    e. Consider internal cavity lavage per MHAUS recommendations (peritoneal or thoracic cavity lavage supported. Gastric or rectal lavage not supported per 2019 edition).
    f. Extracorporeal circulation and heat exchanger (femoral to femoral).
    g. Stop cooling if temperature <38 degrees C and falling to prevent hypothermia
4. Blood Specimen tubes should be collected per following guidelines (in order of draw):

TEST ORDERED	TUBE TYPE	EXPECTED TAT for RESULTS
Blood Cultures	Set of 2 bottles, Aerobic and Anaerobic	
PT, APTT, D Dimer, Fibrinogen	Blue Top	30 minutes
TSH, Free T4	Yellow SST	24 hours
CMP, LDH, CK, CKMB	Mint Green top	45 minutes
Myoglobin	Mint Green top	2 hours
CBC with or without Diff, PLT	Purple top	30 minutes
Lactate	Grey top	30 minutes

*Blood cultures are very useful and should be included to rule out bacteremia.

5. Urine collection for myoglobin level may be indicated if blood is positive on the UA dipstick. Pigmenturia (e.g., brown or red urine) indicates that renal protection is mandated. When the urine is centrifuged or allowed to settled, and the sample shows clear supernatant, i.e., the coloration is due to red cells in the sample.
6. Admit patient to appropriate Intensive Care Unit.
7. Educational materials will be provided to the patient and patient's family.

E. Documentation

1. Assessments and care given will be documented by the procedural or circulator RN on the intra-operative or appropriate procedural record.
2. A Datix Event Report will be filled out and sent to the unit manager and Quality Management.

Massive Transfusion

For additional information refer to full Policy: *Massive Transfusion of Blood and Blood Products in Adult* in PolicyStat

Hemostasis goals while using this guideline:

1. INR < 1.5, PTT < 45 seconds
2. Fibrinogen > 100 mg/dL
3. Platelet count > 100,000/mL
4. HCT > 24%

Resuscitation Goals while using this guideline:

1. Temp > 36° C
2. SBP > 100 mmHg
3. HR < 110 BPM
4. Ionized Calcium > 1 mmol/L
5. Urine Output > 0.5 ml/kg/hr

PROCEDURE Copy Link

Upon recognition of acute, massive, uncontrolled bleed:

A. **Physician verbal order is required to initiate massive transfusion protocol (MTP)**

B. **Circulating Nursing Responsibilities:**

1. Notify Team Leader, Charge RN for additional help.
2. Notify blood bank (x67806) of initiation of this guideline. Use the SBAR-R format:

SBAR-R Format

S (situation)	Give your name and location. State that you are initiating the Massive Transfusion Protocol.
B (background)	Provide patient name, medical record number, patient location, name of contact person on unit during "Massive" and phone extension.
A (assessment)	Give information regarding source(s) of bleeding (i.e. surgical, coagulopathy, etc.), anticipated blood product needs and the most recent hematocrit, if known.
R (request)	Request Massive Blood Pack
R (repeat back)	Blood bank technologist should repeat back the request for Massive Transfusion Pack, patient name, medical record number, unit contact person and phone extension. The technologist will give an estimate of when products will be available.

C. **Transfusion Nurse will communicate with Blood Bank:**

1. Enter order for :
   a. Massive Blood Pack STAT. These and all additional labs should be designated "STAT" and "massive transfusion" should be entered on comments line.(These initial lab studies, especially for Type and Cross which is ordered in the blood pack, should be collected before any blood products are transfused, but transfusion will not be held up pending lab results).
   b. Massive Lab Panel and obtain specimens (Order includes hemogram with platelets (HGM), PT/INR, PTT, fibrinogen, D-Dimer and basic metabolic panel.
2. Assure that blood products will be obtained from blood bank via the designated runner. (Avoid utilizing the tube system during a massive transfusion.)
3. Verify all blood products prior to administration per Oregon Nursing Policy PO-022-10-V1
4. Confirm that products should remain in Blood Storage Transport cooler at the patient's bedside until use. (Unused products that have the potential to remain in the cooler for >30 minutes should be moved to the blood refrigerator).
5. If products are not used, they need to be returned to the blood bank.
6. Discard all empty blood and blood component bags into one spot in the room in which the patient is receiving care. This helps to make sure that all units transfused were documented. The empty bags can be discarded 1-2 hours after protocol is discontinued).
7. Notify blood bank when use of Massive Transfusion Protocol has been discontinued.
8. Notify blood bank when patient location changes.

Specimen Handling

For additional information refer to full Policy: *Specimen Handling in Surgical Services* in PolicyStat

Specimen Handling is a complex process with many steps involved to ensure the test is completed correctly for the correct patient.
Policy: *Specimen Handling in Surgical Services* comprehensively outlines all steps needed to ensure safety. Refer to full policy when on site if handling specimens.

- OR/Procedural RN Specimen Handling Responsibilities:
  - Correctly and appropriately handle, label, document and provide safe delivery of specimens.
  - Specimens requiring special handling will be directly taken to pathology, where pathology personnel are notified and verbally told what exam is required and whether a call back is needed.
- Specimens are:
  - Obtained from the sterile field as soon as possible/within a timely fashion with surgeon's permission.
  - Placed in closed containers, with secure lids, and kept moist.
  - Verified with the surgeon in order to correctly document:
    - Specimens in EPIC
    - The information and details on the consultation form (if/when needed)
    - See detailed process further below in policy
  - Correctly logged in the specimen log book when transporting/dropping off specimens for pathology.
    - See detailed process in Procedure B, section 4 in policy,

- Each specimen must be accurately and legibly labeled with the following:
  a. Patient identification – patient sticker (to include at a minimum two patient identifiers - patient name, DOB)
  b. Letter of Specimen
  c. Name and/or Description of specimen, including site and laterality
  d. Date specimen collect
  e. Time specimen collected from the field
  f. OR RN initials
  g. Surgeon

Dress Code

For additional information refer to full Policy: *Dress Code (Surgical and Procedural Attire)* in PolicyStat

Surgical Attire

A. Facility approved and laundered, or disposable, surgical attire must be donned daily in a designated dressing area before entry into semi-restricted and restricted areas.

a. Personal surgical attire is not allowed. Surgical attire must not be worn arriving or leaving the medical center.

a. Use of personal hair coverings permitted as described in section "B".

b. Surgical attire must be changed daily

c. Whenever it becomes visibly soiled, contaminated, or wet.

d. Surgical attire contaminated with visible blood or body fluids must remain at the medical center for safe transport to laundering facility.

e. Personal clothing that is worn under surgical attire must be clean and with minimal amount of low lint fabric showing beyond surgical attire (e.g. neckline of undershirt).

f. Arms may be covered during performance of preoperative patient skin prep; wearing sterile gloves for application or delivery of all patient skin preps is required

g. Jumpsuits designed to completely cover personal apparel are provided for visitors entering the department to work briefly in the semi-restricted and restricted areas (e.g. biomedical engineers, repairmen, law enforcement).

B. All personnel must cover scalp and hair when entering the semi-restricted and restricted areas.

a. All efforts will be made to cover as much hair as possible.

b. Facial hair (beards and moustaches) should be be covered when in the restricted areas and while prepping and packaging items in the clean assembly section of sterile processing.

c. If reusable head coverings are worn, hospital-laundered cloth options are preferred.

a. Personal head coverings may be worn. They should be visibly clean, contain hair well, and have no rips or holes that allow hair to protrude.

b. Personal head coverings that become visibly contaminated with blood, body fluids, or other potentially infectious materials must be laundered on campus before being taken home. Contact Environmental Services for assistance with contaminated attire.

d. Remove head covering at the end of shift or when they are contaminated.

C. Clean, dedicated shoes must be worn when entering the semi restricted and restricted areas.

a. Shoes should have closed toes and low heals to minimize the risk of injury.

b. Shoe covers or boots must be worn in the instances when gross contamination can reasonably be anticipated.

c. Single use shoe covers worn as PPE must be removed immediately after use. After removal discard and perform hand hygiene.

D. Masks must be worn at all times in the restricted areas during sterile procedures.

a. Masks must cover both the nose and mouth and be secured in a manner that prevents venting.

b. Masks are discarded directly after removal; hand hygiene performed. They are not to be worn around the neck or in pockets.

c. Masks must be changed when soiled, between cases and when leaving the surgical suite.

E. Protective eyewear or face shields must be worn whenever activities could place caregiver at risk for a splash to the face or eyes.

F. Fluid impervious aprons are worn by caregivers performing decontamination and other activities where contact with large volumes of blood or body fluids are unavoidable.

G. Nametags are considered part of the caregiver's dress requirement and must be worn on the scrub top or jacket.

a. Daily cleaning with low level disinfectant recommended.

b. Clean badge with low level disinfectant when badge becomes soiled with blood, body fluid or other potentially infectious material.

c. Badge holders such as lanyards, chains or beads pose a risk for contamination and may be difficult to clean and should not be worn.

H. Personal x-ray gowns may be used, but must be maintained according to hospital policy

I. Fabric stethoscopes coverings must not be used; stethoscopes should not be worn around the neck.

a. Stethoscopes must be cleaning with low level disinfectant between patients.

J. Personal cover apparel, laboratory coats and jackets, must not be worn in the semi-restricted and restricted areas.

K. Personal items necessary for patient care (e.g. back packs, brief cases, fanny packs) may be brought into the semi-restricted and restricted areas. These items should be completely contained in a hospital provided plastic bag and placed in a designated area off the floor.

L. Personal Cell Phones/Electronic Devices brought into the operating room - Daily cleaning with low level disinfectant is recommended.

Personal Grooming

A. Fingernails should be clean, short and healthy.

B. Nail polish is discouraged. If polish is worn it must be free from chips and/or cracks. Caregivers who wear nail polish must use the same discipline of vigorous surgical scrub as if no polish is worn.

C. Artificial nails – any fingernail enhancement or resin bonding product, including extensions or tips, gels, acrylic overlays, resin wraps – cannot be worn when working in the OR, or when handling sterile supplies.

D. Jewelry, if worn, should not pose safety risk to patients or the wearer

1. Jewelry (rings, watches, bracelets, etc) must be removed from hands before performing surgical hand scrub, per AORN guidelines for hand hygiene.

2. Necklaces, if worn, should be tucked into the neckline of the wearer's shirt (scrub top) when scrubbed, or when performing sterile tasks, to avoid having them dangle over the sterile field and pose risk of contamination.

E. On duty caregivers must not wear fragrance of any kind.

Non-Sterile Procedure Rooms (e.g. GI lab/laser lab)

A. It is not required for caregivers/providers to change their clothing once they arrive at work.

B. PPE must be selected based on the potential for exposure during a particular task. PPE in the non-sterile procedure/GI rooms includes:

a. Gloves

b. Gowns

c. Masks

d. Goggles/eye/face shields

C. Effective use of PPE includes proper removal, disposable and hand hygiene.

References:

Labeling of Medications and Solutions

For additional information refer to full Policy: *Labeling of Medications and Solutions* in PolicyStat

A. Labeling occurs when any medication or solution is transferred from the original packaging to another container, unless it is administered immediately by the person who prepares the medication or solution. If the medication or solution that has been removed from its original container will be used over the course of the procedure, the receiving container (including syringes) must be labeled.

B. All solutions and medications used will be in containers that legibly and correctly identify the current contents.

1. Medications and solutions both on and off the sterile field are labeled even if there is only one medication being used.
2. Containers that have not been appropriately labeled will not be used. Any medication or solution found without proper identification will be discarded.
3. The contents must be identified by a label on the main body of the container (i.e. not the lid).
4. A handwritten label or tape may be used.

C. Labels will include:

1. Name of the solution/medication/substance;
2. Strength of solution/medication;
3. Quantity
4. Diluent and volume if not apparent from container;
5. Expiration date when not used within 24 hours
6. Expiration time when expiration occurs in less than 24 hours
   (Expiration date and time are not necessary for short procedures).

D. Medication containers do not need to be labeled if immediately prepared and administered by the same person.

1. If the provider preparing the medication or solution participates in another function before administration, the container must be labeled.
2. If more than one medication is prepared by the provider, each medication container must be labeled.

E. If two or more people participate in the preparation and administration of the medication or solution, a two-person verbal and visual verification of the label's accuracy is required. (Medications prepared and labeled by a pharmacist do not require a second person verification).

F. At the conclusion of an operative or non-operative procedure, all supplies including the contents of any medication(s) or solution(s) will be appropriately discarded. This applies to multi-dose vials unless the vial was accessed outside of the patient room or procedural area. Refer to CDC link under References for information on dating multi-dose vials utilized outside of the immediate patient treatment area.

Positioning the Patient

For additional information refer to full Policy: *Postitioning the Patient in the Perioperative Setting* in PolicyStat

Patient positioning is a complex process with many steps involved to ensure patient safety Policy: *Postitioning the Patient in the Perioperative* **comprehensively outlines all steps needed to ensure safety. Refer to full policy when on site if positioning patients.**

Documentation of patient care

1. Patient care and the use of positioning equipment should be documented on the intraoperative record by the circulating nurse.
2. Documentation should include but not be limited to:
   a. Preoperative assessment with descriptions of the patient's overall skin condition on arrival and discharge from the perioperative suite.
   b. Preoperative assessment of ROM of joints involved in positioning.
   c. Type and location of positioning equipment/padding used.
   d. Initials/names, titles of persons involved in positioning the patient.
   e. Patient position for procedure and any change in position if repositioning is necessary.
   f. Postoperative assessment for injury related to position.

Pregnancy Testing

For additional information refer to full Policy: *Pregnancy Testing in the Female Perioperative Patient* in PolicyStat

PROCEDURE

A. All female patients aged 12 to age 55 and/or menarche that are undergoing elective and urgent procedures requiring anesthesia, will be presented with the option to undergo routine urine HCG or serum BHCG testing prior to surgery within 24 hours of surgery, unless the surgeon or proceduralist denies the order or the patient falls into the exceptions list:

   1. Existing known pregnancy or admitted for incomplete abortion, missed abortion or ectopic pregnancy
   2. Previous hysterectomy
   3. Trauma case

B. Surgeon/Proceduralist and Anesthesia to be notified if patient or guardian refuses HCG testing.

C. Patients that undergo the urine HCG or serum BHCG test, will not be admitted to the operating room until the results are known.

D. Surgeon/Proceduralist will be notified of positive results.

E. Surgeon/Proceduralist will communicate the positive result to the patient alone first, and for patients below the age of 15 the surgeon will also talk to parents or guardian separately.

Pediatric Pre and Post Operative Guidelines

Care and management of Pediatric patients in the Pre and Post-operative area have different guidelines and interventions. Refer to the following policy when on site if caring for Pediatric patients.

Policy: *Pediatric Pre and Postoperative Guideline* in PolicyStat

Latex

For additional information refer to full Policy: *Latex Policy* in PolicyStat

POLICY STATEMENT

1. Providence is a latex-**reduced** environment.
2. Providence approved latex gloves are the only type of latex-containing glove permitted in Providence Oregon facilities and are used in departments such as: Operating rooms, to include c-section rooms and cardiac catheterization labs or wherever a sterile surgical procedure is performed.
3. Non-sterile latex exam gloves should not be purchased or used.
4. Latex balloons are not permitted in Providence Oregon facilities.
5. Where alternatives are available, departments will evaluate alternate products that do not contain latex to possibly replace latex containing products.
6. During test procedures, departments will avoid, whenever possible, use of any product containing latex, e.g. not use latex tourniquets, syringes with rubber gasket, latex tubing, etc.

DEFINITIONS

High Risk Populations include:

1. Individuals with spina bifida/spinal cord injury.
2. Individuals with history of chronic or recurrent infections of the genitourinary tract.
3. Individuals with occupational exposure to latex.
4. Individuals with multiple allergies to medications and/or environmental allergens, e.g., food allergies to bananas, avocados, tropical fruits, kiwi, and nuts.
5. Individuals with a history of a local reaction (urticaria or contact dermatitis) to latex

Latex means natural rubber latex (NRL) manufactured from the milky sap of the rubber tree *Hevea brasiliensis*.

Latex paint does not contain the latex protein. It is not linked to latex sensitivity and is not covered by this policy.

Latex-reduced environment is an environment that minimizes contact and aerosolized latex allergen exposure.

RESPONSIBILITIES

Managers

a. Implement this policy within the department.

b. Ensure latex-free products are used whenever possible.

c. Do not order latex products outside the system to replace latex-free products available through the system.

Caregivers

a. Complete the latex questionnaire provided by Caregiver Health during the initial health screening.

b. Do not bring latex containing products, including latex balloons, into Providence facilities.

c. Report known or suspected latex sensitivity/allergy to Caregiver Health via the EHS Hotline (503- 216-3200)

d. Caregivers who experience signs and symptoms that may be associated with latex products, or symptoms that interfere with their ability to perform essential job functions will report to their supervisor, file an incident report and/or a Job Accommodation Request via the Sedgwick Portal.

e. Caregivers who are sensitized to latex will:

- Seek to minimize contact with latex containing products.
- Follow policies and procedures for latex sensitive individual.
- Collaborate with their core leader and HR Client Manager to discuss the need for accommodation.

Caregiver Health

a. Direct caregivers to the Sedgwick Portal for reporting of health issues related to Latex sensitivity or to submit a Job Accommodation Request.

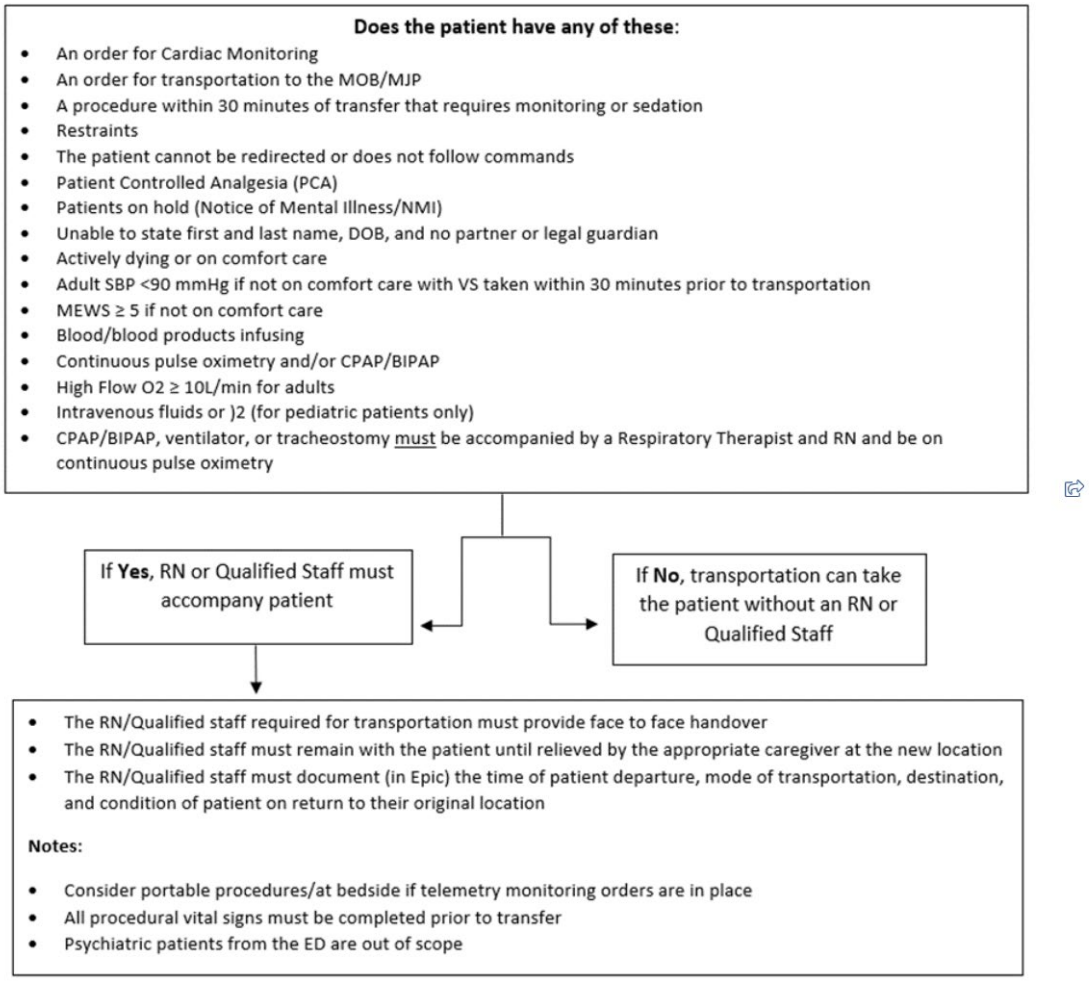
Transfusion Specimen Collection and Labeling

For additional information refer to full Policy: *Transfusion Specimen Collection and Labeling Procedure* in PolicyStat

STEP	ACTION
1	**Inpatients**: Check that the patient is wearing a facility identification armband. The band must be attached to the patient's body. **Outpatients**: Prepare a patient armband that includes the following; patient first and last name, PH&S medical record number, patient date of birth. Attach the band to the patient's body, usually the wrist. **Provide instructions to the patient to leave the band attached until either: a) their outpatient transfusion procedure is completed or b) they are discharged from the hospital.**
2	For a conscious patient, ask them to state and spell their first and last names and state their date of birth. Verify that the information given matches the information on their identification armband **exactly**. If not, correct any discrepancies before proceeding. If the patient is not conscious or is incoherent, ask a family member or friend that is accompanying the patient to verify their identity. If a family member or friend is not present, ask the patient RN to confirm the patient identity.
3	Verify that the patient first and last names and date of birth on the physicians order **exactly** matches the identification armband. If not, correct discrepancy before proceeding.
4	Prepare the specimen label - **do not affix label to the tube until after the specimen is collected.** A hand written or pre-printed label may be used. Alternately, hand write the required information directly on the tube. Patient information on the specimen label must **exactly** match the patient information on the identification armband. **The label must include the following legible information**: • Patient full last name, full first name (middle name optional) • Medical record number • Date of collection (The date on a pre-printed label must match the current date, otherwise the date of collection must be handwritten.) • Time of collection • Collector's initials ◦ **Note**: For Cerner Bridge labels, the pre-printed phlebotomist identifier is acceptable. **Notes:** • If the patient has an unusually long name, the pre-printed labels may have truncated the name. The label must include the full first and full last name and match the patient armband exactly. Hand writing may be necessary. • The Admitting Department caregivers must contact the facility blood bank prior to making changes to any patient identifier and swapping out armbands. A new transfusion specimen must be collected if any of the required patient identifiers above are changed. Refer to *Updating Wellsky Patient Registry Procedure*.
5	Collect the sample by venipuncture or from an established line taking care not to contaminate the sample with intravenous fluids. It is acceptable to shut off the IV for 2 minutes and then collect the sample if necessary.
6	Immediately place the prepared label on the sample in the presence of the patient. Place the label lengthwise on the sample aligned so the left side of the label is closest to the tube cap. **NEVER leave the patient's side with the sample unlabeled.**
7	Follow local processes to deliver the sample to the appropriate facility laboratory Blood Bank as soon as possible.

Transportation of Patients

For additional information refer to full Policy: *Transportation of Patients* in PolicyStat



Neuraxial Care

For additional information refer to full Policy: *Neruaxial Management and Competency for Adult and Pediatric Non-Obstetric Patients* in PolicyStat

There are two different levels of neuraxial care: BASIC and ADVANCED.

- Basic care includes basic assessment and monitoring of patients receiving neuraxial analgesia/anesthesia.
- Advanced care includes basic care as well as advanced skills of setting up the pump administering medication bolus via epidural pump, adjusting medication rate on pump, hanging a new bag, and discontinuing the epidural line when ordered

What is Neuraxial Analgesia/Anesthesia?

- **Neuraxial** refers to the central nervous system including the spinal cord.
- **Neuraxial analgesia**, therefore, refers to analgesic agents instilled into the central nervous system via the spinal cord.
  - This includes **intrathecal analgesia** and **epidural analgesia**.
- Epidural and intrathecal are very similar. The differences lie within indications for use.

Neuraxial Analgesia / Anesthesia: Benefits

- Administration of medication close to the site of pain transmission
- Requires less medication, resulting in fewer systemic effects, and thus fewer associated side effects
  - Using the epidural or intrathecal method allows for significantly smaller doses to be used compared to treating pain with oral or IV options, thus pain is controlled well with less side effects
  - This will allow patients to perform ADL's earlier and more independently, therefore avoiding risks of prolonged immobility (e.g. pneumonia, bowel obstruction, DVT)
- Decreased metabolization of the medications
- Not dependent on vascular absorption to reach their destination
- Neuraxial analgesia may decrease cardiac workload and myocardial oxygen demand

Epidural Space

- Analgesic and/or anesthetic medication can be administered via catheter into the epidural space between the dura mater and the vertebral canal.
- Drugs administered into this space diffuse across the dura and bind to receptors in the spinal cord.
- They also affect nerve roots outside of the dura and are absorbed systemically from blood vessels that are also in the epidural space.
- There may be tissue and fat in this space, but not spinal fluid. Medications are injected at any level of vertebral column.
- Note: Epidural pain management does not ensure that the patient will be completely pain free.

Intrathecal Space

- The intrathecal space is also known as the subarachnoid space— it is the space between the dura and the pia mater.
- Cerebrospinal fluid (CSF) circulates within the intrathecal space.
- They also affect nerve roots outside of the dura and are absorbed systemically from blood vessels in the epidural space.

Neuraxial Care (cont)

Neuraxial Analgesia / Anesthesia: Risks

- Respiratory depression
- Neurotoxicity
- Epidural hematoma potentially resulting in permanent paralysis
- Symptomatic hypotension
- Urinary retention
- Infection
- Risk for alterations in skin integrity due to altered sensation and immobility
- Risk for falls due to altered sensation and weakness

Neuraxial Analgesia / Anesthesia: Cautions

- Only epidural infusion tubing can be used to administer epidural medications
  - Usually identified with a yellow line on the tubing
  - No ports
- Epidural medications must be preservative-free, and labeled as "pf" and "for epidural use only"
- Infection is a serious complication of neuraxial lines
- Only **advanced** neuraxial RNs may manage epidural pumps and tubing
  - Never access the line directly (no "scrub the hub," no use of syringe for administration)
  - Ordered epidural bolus doses must be administered via locked epidural pump

Important: RNs ***do not*** administer intrathecal medications or manage intrathecal pump/tubing. ***Only*** anesthesia providers may provide intrathecal management.

Roles and Responsibilities in Relation to Management of Patient with EPIDURAL Catheter

Anesthesia Provider

- Test dose
- First dose
- Syringe/non-pump bolus
- Dressing changes
- Orders for medications, dosing, management, and catheter removal

Basic Neuraxial RN care

- Patient assessment and monitoring per policy

Advanced Neuraxial RN care

- Patient assessment and monitoring per policy
- Administer ordered medications (infusion, bolus, rate change) via epidural pump
- Change medication bags and tubing
- Reinforce dressing
- Discontinue catheter (per provider order)

Neuraxial Care (cont)

Roles and Responsibilities in Relation to Management of Patient with INTRATHECAL Catheter

Anesthesia Provider

- Administers all medication doses
- Orders any additional pain medications that may be needed while intrathecal medication is active

Registered Nurse

- Patient assessment and monitoring per policy
- Confirm medication administered via intrathecal route and its duration of action
- Reminder: do not administer any additional pain medications by any route for the medication's duration of action without an order from an anesthesia provider

DRUG	ONSET IN MINUTES	DURATION	HALF LIFE	PEAK ACTION IN MINUTES	ADVERSE REACTIONS	NURSING CONSIDERATIONS
MORPHINE (Duramorph)	30-90	Up to 24 hrs	2-4 hrs	90-120	N/V, itching, sedation, respiratory depression	Early respiratory depression may occur w/in 2 hrs of loading dose Late respiratory depression may occur as late as 2-12 hrs after loading dose
FENTANYL (Sublimaze)	5-15	2-4 hrs	3-4 hrs	10-20	N/V, itching, sedation, respiratory depression	Respiratory depression w/in 1 hour of dose Elderly/obese most susceptible to effects- consider a dose decrease of 25%
HYDROMORPHONE (PF Dilaudid)	15-30	Up to 18 hrs	2-3 hrs	45-60	N/V, itching, sedation, respiratory depression	Respiratory depression w/in 1-2 hrs of bolus May produce delayed respiratory depression
NALOXONE (Narcan) Opioid Reversal agent	Immediate 1-2	30-60 min	30-80 min	5-15	Rapid admin may cause N/V, HTN, Cardiac Arrhythmias, Pulmonary Edema, severe pain	Mix Narcan 0.4mg w/ 9ml NS in 10 ml syringe. Per orders: For RR<8, give 0.04mg (1ml) slow IV push Q 2 min prn until RR>12, notify provider. For respiratory arrest, give one dose of 0.4mg IV STAT, call Code Blue, notify provider. **Titrate for adequate ventilation & LOC w/o precipitating pain**
BUPIVACAINE (Marcaine)	20 min	1-4 hrs	2.7 hrs	30-45	Respiratory depression, hypotension, bradycardia, cardiac arrhythmias, toxicity	Assess sensory/motor function (Dermatome & Bromage) with vital signs In combination w/ epidural opioid, has synergistic effects
ROPIVACAINE (Naropin)	20 min	1-4 hrs	5-7 hrs	34-43	Respiratory depression, hypotension, bradycardia, cardiac arrhythmias, toxicity	Assess sensory/motor function (Dermatome & Bromage) with vital signs In combination w/ epidural opioid, has synergistic effects

Updated 9/2016

General Safety

General Safety Notes	Bedside Safety Equipment	• Bag Valve Mask and Oral Airway at bedside
	Anticoagulation Status	• Review anticoagulation status and medications with anesthesia
	IV Status	• Maintain patent IV access for 6 hours after last dose of fentanyl medication • Maintain patent IV access for 24 hours after last dose of hydromorphone or morphine medication
	Reversal Agents	• Ensure reversal agents are available on nursing unit
	Notify Anesthesia	• If the site dressing begins to peel and you need a dressing change • If the patient is experiencing unacceptable pain • If the catheter is severed or disconnected • Trouble with pump alarm or tubing • Removal: If catheter tip in not intact • Any intrathecal pump action

Neuraxial Care (cont)

General Care

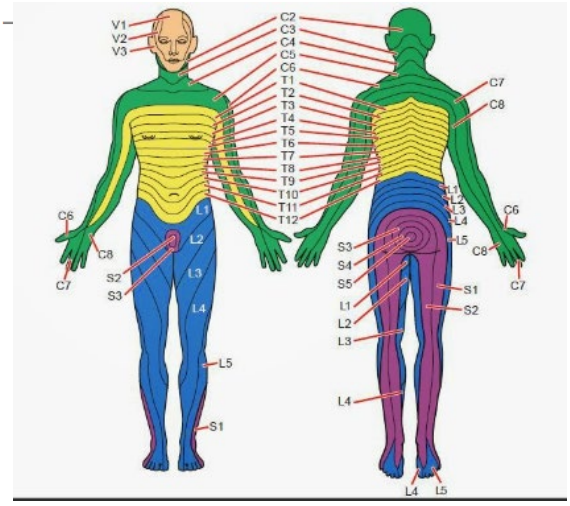
- Review relevant assessment data (e.g., history of anti-coagulation therapy, reaction to local anesthetics, opioids, pain level, vital signs, etc.)
- Verify IV patency - A patent IV is needed for 6 hours after last dose of epidural fentanyl, 24 hours after last dose of epidural hydromorphone or morphine, or as ordered by LIP
- Verify provider orders for epidural medication
- Check catheter site for any bleeding, leakage, signs and symptoms of infection, excessive tenderness to palpation, or swelling. Notify anesthesia if present.
- Assess integrity of dressing. Notify anesthesia if dressing is compromised (Only anesthesia can change dressing).
- Verify epidural medications are labeled “epidural use only”
- Verify epidural pump is labeled “epidural”.
- Verify all Luer lock connections are secure.
- Ensure the catheter is securely taped to the patient.
- Confirm tubing is epidural tubing (labeled appropriately, no ports).

Adult Monitoring Parameters for ALL Epidural/Intrathecal			
Assessment	**Opioid/ Analgesic**	**Anesthetic**	**Frequency**
Pulse Oximetry	X	X	Continuous
BP, Pulse, Temperature, Pain	X	X	Per LIP order. No LIP order= q4 hours and PRN
Dressing Site Assessment	X	X	Every 8 hours and assumption of care
Urinary Output/Retention	X	X	Per LIP order. No LIP order= q shift and 24 hours post medication discontinuation
Sedation, Respiratory Rate, Pattern & SaO2	X	X	For bolus, initial dose & rate changes: • q1-hour x 12 hours • q2 hours x 12 hours • Then q4 hours x 24 hrs past last dose of medication/end of infusion • As needed per patient condition unless otherwise ordered.
Dermatomes & Bromage		X	• Prior to administration (infusion/loading dose/bolus) • 30 min after administration with initiation, rate change or bolus • Q4 hrs until 24 hrs after last dose • Before ambulation • PRN patient condition
Assessing Ambulation Safety		X	• The Bromage score should be ZERO to proceed • Sensory Level must be normal on the entire sole of foot to proceed • Assess orthostatic response to dangling on the edge of the bed ○ Do NOT ambulate is there is a systolic drop of 15 mmHg or more • Have the patient stand at the side of the bed and ask them to bend their knees slightly and then straighten them. If they can steadily complete this step you may proceed with ambulation with stand-by assist.
Signs and Symptoms of Toxicity	X	X	• prior to administration • 30 min after administration • Q4 hrs until 4 hrs after last dose • before ambulation • PRN patient condition (Anesthetics Only)

Pediatric Considerations	
Anesthetic Medications	• Assessment of sensation for a pre-verbal, non-verbal, or developmental delayed pediatric patient may not be feasible. If the assessment of the child's pain is that it is under control, then the assessment of sensation in unnecessary. • If the pre-verbal, non-verbal, or developmentally delayed pediatric patient's pain assessment is that it is NOT under control, consult the anesthesiologist to assess the patient and direct treatment changes
Opioid Medications	• After an epidural is placed the patient should be monitored q 5min for BP, HR, RR, O2 saturation, and mental status until stable for at least 15 min, then q15min for one hour. Progress to q2h VS. • If a rate change or epidural bolus dose produces hemodynamic instability unresponsive to the fluid challenge per the epidural orders, call the anesthesiologist for orders. • If a rate change or epidural bolus produces hemodynamic instability that is responsive to a fluid challenge, the patient should continue to be monitored q5min for BP, HR, RR, O2 saturation, and mental status until stable for at least 15 min, then q15min for one hour. Progress to q2h VS.
Dermatome Assessment	Q 4 Hours Assessment of sensation for a pre-verbal, non-verbal, or developmental delayed pediatric patient may not be feasible. If the assessment of the child's pain is that it is under control, then the assessment of sensation in unnecessary. If the pre-verbal, non-verbal, or developmentally delayed pediatric patient's pain assessment is that it is NOT under control, consult the anesthesiologist to assess the patient and direct treatment changes
Bromage Assessment	Q 4 Hours Unable to assess Bromage motor function on pediatric patients who are non-ambulating due to age or developmental status
Assessing site for dressing integrity, drainage, and catheter securement	On assumption of care and every 4 hours
Urinary Output Monitoring	Urine output every 4 hrs and assess for symptoms of retention.

Neuraxial Care (cont)

Dermatomes



- Lightly touch the patient's upper arm or cheek with an alcohol swab or ice inside nitrile glove
- Ask if it feels cool
- This allows you to determine the patient's ability to sense and differentiate temperature
- Begin sensory testing by cold swiping using horizontal sweeps starting in an area with no sensation
- Ask patient to report when they feel the same coolness they did on upper arm or cheek
- Move in one inch increments on both sides
- When patient is not able to differentiate temperature change (numbness), correlate the anatomical location of return of sensation with the representative dermatome graphic and document

Bromage

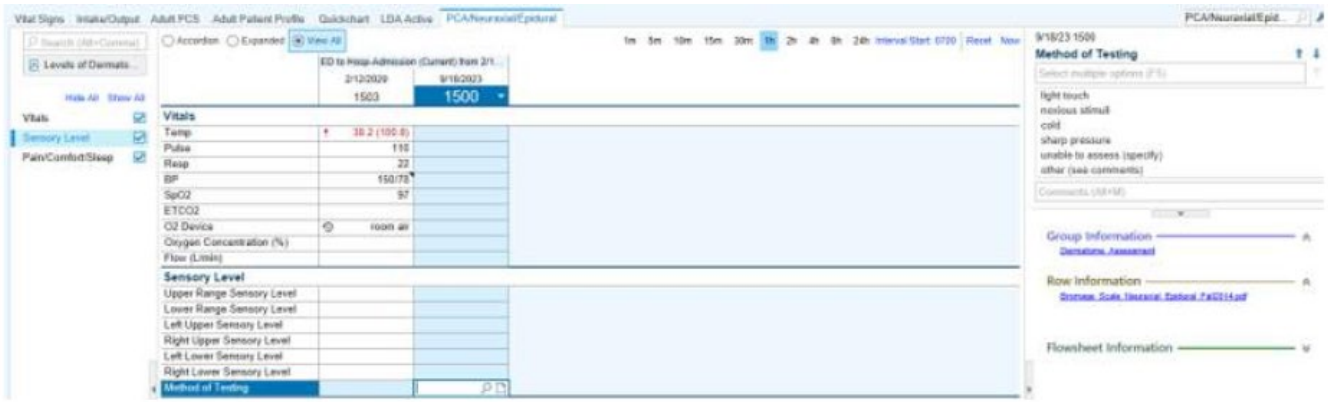
Assess motor function by asking patient to:

1. Dorsal/plantar flex
2. Bend knees
3. Move their legs (unless movement is contraindicated)

Bromage Scale for the Degree of Motor Block Associated with Epidural Anesthesia

Able to Move Legs	Able to Flex Knees	Able to Move Feet	Degree of Motor Block	Grade
Yes	Yes	Yes	nil	I
No or minimal	Limited	Yes	partial	II
No	No	Yes	almost complete	III
No	No	No	complete	IV

This scale was published in *Epidural Analgesia, PR Bromage, Page 144. Copyright* W.B. Saunders Co., 1978



Neuraxial Care (cont)

Urgent and Emergent Care
The pain management benefits of epidural and intrathecal catheters are tremendous; however, there are serious and potentially life-threatening situations that can result from epidural catheters.

These include:

- Systemic toxicity
    - Toxicity-tingling around lips, Tinnitus, slow speech, metallic taste
    - Severe toxicity- seizures, bradycardia ventricular tachycardia, ventricular fibrillation, asystole
- Hematoma
    - Must be recognized and treated immediately to avoid permanent loss of neurologic function
    - Ask patients to tell you if there is a change in sensory sensation or heavy/shooting/numb/tingling sensation in either/both legs along with back pain
    - The biggest red flag for an epidural hematoma is a prolonged sensory deficit. If the sensory effects of an epidural aren't wearing off after the medication is discontinued, consider the possibility of an epidural hematoma and notify the anesthesia provider.
    - Severe pain is not a common finding
    - If calling provider regarding concern for a potential hematoma, be sure your SBAR highlights if a patient is on anticoagulant medication as this increases risk.
- Neuro-toxicity from infused alcohol, antiseptics and preservatives
- Over-sedation
    - A thorough and timely assessment is essential in prompt identification and treatment for over-sedation.
    - Requires IV reversal agent
- Allergic reaction
- Epidural catheter line disconnection/dislodgement
    - A broken/disconnected catheter is considered contaminated and should not be used/re-connected.

Neuraxial Care (cont)

Managing Epidural pumps

	Assessment	Intervention
Respiratory	• RR < 8 or > 20 • Sp02 less than 93%	• Stop infusion • Support with Bag-Valve-Mask ventilation • Administer O2 therapy per order • Administer medications/reversal agents per order • Call RRT or Code Blu
Level of Consciousness	• If unable to arouse the patient • Sedation level Ramsay greater or equal to 4 • POSS greater than or equal to 3	• Stop infusion • Administer reversal agent per orders • Call RRT
Cardiovascular	• BP > 20% from baseline • BP < 89 mmHg systolic • Increased HR > 20 beats/min from baseline • Postural BP drop > 15 mmHgHR > 120	• Follow hypotension orders • Place patient in full supine position • Call provider
Sensory/Motor	• Numbness above dermatome t4 (nipple line) • Continuous progressive rise in dermatome level • Shortness of breath • Inability to bend knees (Bromage 2 or greater) or progressive rise in score	• Stop infusion • Elevate the head of the bed • Call provider
Catheter Related	• Tubing becomes disconnected from catheter • Catheter severed	• If line is disconnected, cap line with sterile cap immediately • If line is severed, place occlusive transparent dressing (Tegaderm) over distal (severed) end immediately • Contact anesthesiology immediately • Convey to anesthesiology: • If disconnected/severed line was witnessed or not • How much time may have elapsed from dislodgement/disconnection to discovery (i.e., establish the "last known normal" time) • Swab a disconnected/severed catheter with an antiseptic agent ONLY when ordered by anesthesiology • Do not reconnect the tubing