Policy/Purpose

The Pre-Procedure Anesthesia Protocol provides a general set of nursing instructions and orders aimed at the effective and safe preparation of a patient undergoing anesthesia care during a procedure. This protocol may be utilized under the direction of the department of anesthesiology for patient preparation in the pre-surgery clinic, procedural holding areas, radiology, medical diagnostics unit, procedural care unit and cardiovascular laboratory. These instructions are not exhaustive; anesthesia providers should be consulted for patient care conditions not described in this protocol.

Definitions

Intermediate & high risk elective surgeries include the following (some examples are provided but <u>are not exhaustive</u>):

- Cardiothoracic
  - Example: Coronary Artery Bypass Grafts, Heart Valve Replacement, Thoracotomy
- Major Vascular
  - Includes cases involving major central arteries and veins (i.e. aortic, carotid, femoral, iliac)
  - Does not routinely include surgeries involving small vessels of the arms and legs
- Head & Neck
  - Example: Radical neck dissection, lymph node removal with tumor resection
- Intra-abdominal/pelvic
- Intracranial
- Lithotripsy (due to shock wave impact)
- Major plastic reconstruction of the chest and abdomen
  - Example: pectoral or abdominal wall flaps
- Multi-level spine
- Orthopedic involving humerus, femur, tibia, pelvis
- Prostate resection or removal
- Ventral Hernia

Surgeries with a high risk of bleeding:

- Cardiothoracic and Major Vascular
- Intracranial Surgery
- Major plastic reconstructive procedures
- Occulo-plastic surgery
- Percutaneous Nephrostomy
- Prostatectomy, Transurethral resection of the prostate
- Retro-bulbar block during cataract/retinal
- Intramedullary (within the spine) surgery
- Strabismus repair

Instructions

1. Nurses will conduct and document an assessment of the patient.
   a. This will include but is not limited to pertinent psycho-social needs of the patient and family, prior surgical, medical and anesthesia history, a list of current medications including dose and

frequency, supplements, known allergies, review of pertinent laboratory and diagnostic testing results.

  b. If a patient reports a severe or molecular latex allergy, if possible, nurses will obtain records from the patient's allergist and consult anesthesiology to review the testing. Additional precautions will be initiated based on the anesthesia provider assessment of the severity of the allergy.
  c. Nurses will consult with the anesthesia provider assigned to the department for patient conditions or concerns which may need a specialized plan of care or additional medical orders beyond this protocol. This includes, but is not limited to, unstable or untreated complex medical problems, uncontrolled medical conditions such as hypertension or hyperglycemia, abnormal test results such as EKG, blood or chest images without evidence of medical intervention, severe lidocaine allergy and family or known history of malignant hyperthermia.

2. Nurses will initiate the Pre-Procedure Anesthesia Management protocol for all patients scheduled for a procedure with anesthesiology care. All protocol orders must be approved by a licensed, privileged practitioner and signed on the date of procedure.

   a. Patients undergoing cataract surgery, diagnostic endoscopy and other cases in which moderate sedation will be used will receive a phone screening for acuity assessment and patient instructions. The case will change to monitored anesthesia care (MAC) if identified as an ASA 4. No additional diagnostic testing, cardiac or pulmonary intervention is required for moderate sedation.

   b. Monitored Anesthesia Care (MAC: deep sedation or general anesthesia) for diagnostic and/or interventional angiography, invasive radiology, ERCP and EBUS will be managed through a PSC screening call and laboratory tests as indicated by patient condition. MAC for cataract surgery does not require laboratory testing for patient condition.

3. Patients may be evaluated and optimized for surgery by their primary care physicians or local preoperative medicine specialists. Pre-Surgery nurses will assess the patient to ensure the requirements of the anesthesia protocol are met.
   a. If there is a discrepancy between testing requirements in the anesthesia protocol and the tests ordered by another physician, the pre-surgery clinic nurses will ensure the required tests for anesthesia are completed along with other orders.
   b. If there is a discrepancy regarding medication instructions, the nurses will defer to the anesthesia protocol and may choose to consult an anesthesia provider for clarity.
   c. Surgeon preoperative order sets should be followed in addition to applicable orders in the anesthesia protocol.

4. Nurses will provide the following diet instructions:
   a. No solid food or milk products (including infant formula) after midnight.
      i. This includes gum, chewing tobacco and candy
      ii. Do not swallow toothpaste
   b. Clear liquids may continue after midnight up to TWO hours prior to the surgery or procedure. Clear liquids include fat free vegetable, beef or chicken broth.
   c. Infants (up to 12 months of age) may be breast fed up until 4 hours prior to the surgery or procedure.

5. Notify the anesthesia provider of history of high blood sugar results within 3 months of surgery for all surgical patients.
   a. When performing a capillary blood glucose, refer to policy #1436 Precision XceedPro Glucose Meter (CBG, Blood Glucose, Glucometer) for instructions regarding procedure and management of test results.

6. Diabetic patients: in general, defer to the prescribing MD for a plan or instructions with diabetic medication. If plan not available, nurses will provide instructions to diabetic patients regarding medications according to the attached reference, Addendum A. Diagnostic tests will be ordered according to Addendum A.

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Key Point: When an insulin calculation based on Addendum A results in partial unit dose, the nurse will round down to the nearest unit when instructing the patient.

7. Nurses will provide the following medication instructions as applicable:
    a. Continue all home medications unless specifically described below.
    b. Do not take the following on the morning of surgery:
        i. Vitamins
        ii. ACE inhibitors
        iii. Angiotensin II receptor antagonists
        iv. Diuretics except those containing a beta-blocker
            1. Instruct patient to hold potassium supplement if there is a history of stomach distress when taken without food.

    c. Stop the following medications as indicated:
        i. Five days prior to procedure:
            1. Medications containing Buprenorphine
                a. Instruct patient to contact prescribing physician for a transition plan.
            2. Coumadin (see bridge instructions)
            3. NSAIDs (non-steroidal anti-inflammatory drugs). Note considerations for aspirin related to cardiac stents in #12.
            4. All medications taken for erectile dysfunction disorders.
        ii. Seven days prior to procedure:
            1. Herbal supplements
            2. MAO inhibitors except Eldepryl
            3. Phentermine
        iii. Notify the anesthesia provider if these timelines cannot be achieved for the listed medications except NSAIDs and Herbal supplements.

8. Electrocardiogram (EKG) will be obtained based on the attached reference (Addendum A) or if the patient is experiencing acute or uncontrolled symptoms within the past 6 months for the following diagnosed conditions:
    a. Arrhythmia including bradycardia, heart block, controlled rate atrial fibrillation, occasional premature ventricular contractions (PVC) or paced rhythm
    b. Cardiovascular or major vascular disease
    c. Cerebrovascular disease
    d. Chronic Kidney Disease (GFR <60 or abnormal age adjusted creatinine clearance)
    e. Diabetes Mellitus

9. With the exception of moderate sedation cases listed in part 2, laboratory testing will be obtained based on the attached reference, Addendum A.

10. Whenever possible, nurses will obtain copies of cardiac and pulmonary studies completed within the past five years.

11. Whenever possible, nurses will obtain interrogation reports for all surgeries:
    a. Pacemakers within the past twelve months.
    b. Internal defibrillators within the past six months.
    c. If there is no interrogation report available, nurses will discuss the patient history with the anesthesia provider assigned to the pre-surgery clinic to determine a plan of care. Nurses will facilitate an appointment with cardiology (if necessary) and notify the surgeon of the plan.

12. Special considerations for patients with cardiac stents and/or known cardiac disease:
    a. Elective non-cardiac surgery should be deferred for at least 6-weeks following placement of a bare metal stent (BMS). Notify the anesthesia provider if applicable.
    b. Elective non-cardiac surgery should be deferred for at least 6 months following placement of a drug eluting stent (DES). Notify the anesthesia provider if applicable.
    c. Notify the anesthesia provider if patient is taking dual anti-platelet therapy 6 weeks post BMS or 6 months post DES insertion.

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d. Patients with cardiac stents should remain on aspirin pre-operatively unless scheduled for a surgical procedure with a high risk of bleeding complication (see definition on page 1).
    i. If a patient with cardiac stents or known cardiac disease has been advised by their primary care physician or surgeon to stop aspirin prior to surgery, notify the anesthesiology department. The anesthesia provider responding to the call will be responsible for consultation with cardiology, surgeon and primary care and will document a resolved plan of care and aspirin instruction order in the medical record.
e. Elective non-cardiac surgery should be delayed for 60 days after a myocardial infarction in the absence of a coronary intervention.

13. For patients on anticoagulation therapy, a bridge plan should be documented by the prescribing physician. For questions regarding the appropriate bridge plan, the prescribing physician should be directed to the Perioperative Anticoagulation Guideline.
    a. For patients on aspirin for primary prevention of Cardiovascular Disease but no known heart or vascular disease, aspirin may be stopped by the surgeon or primary care physician without Cardiology or Anesthesiology consult.

14. Day of procedure nursing instructions for anesthesia care:
    a. Complete a review of patient's current medical condition, review of allergies, medication list, NPO status, vital signs, height/weight, transportation arrangements and consent status.
        i. Report concerns, unplanned events or questions to the surgeon or anesthesia provider as appropriate.
        ii. Other nursing care should be referred to the Preparation for Surgery policy.
    b. Intravenous fluids:
        i. IV to be started by the anesthesia provider on all patients 10 years old and younger or at the discretion of the care team.
        ii. An intradermal injection of bacteriostatic normal saline 0.9% (up to 0.5ml) may be used as a local anesthetic before starting an IV.
            1. Lidocaine 1% (up to 0.5 ml), intradermal injection may be used as a local anesthetic for patients who have a history of difficult IV access, present conditions associated with difficult access, patient request or a large catheter (#16For larger) is being inserted.
        iii. For non-dialysis adult patients, connect 1000 ml of lactated ringers to IV and infuse at 20ml per hour unless otherwise ordered.
        iv. For dialysis patients and any patient with a potassium level greater than or equal to 5, connect 1000 ml of normal saline to IV and infuse at 20ml per hour rate unless otherwise ordered.
        v. Set-up an IV with micro-drip tubing and lactated ringers 500 ml for patients 1-10 years old and infuse at 20ml per hour unless otherwise ordered. Pediatric flow rate should not exceed 1ml/kilogram/hour.
        vi. Set-up an IV with burette and lactated ringers 500 ml for patients less than 1 year of age unless otherwise ordered.
    c. Complete all laboratory testing as indicated by the attached reference or physician orders.
    d. Initiate all additional surgeon orders.
    e. For Pediatric patients, print the weight based emergency medication list.
15. Site Specific Instructions for Madras:
    a. All adult patients will recieve a 500 ml bolus of IV fluids in the Preoperative Holding area unless the patients has a history of congestive heart failure, renal insufficiency or renal failure. The anesthesia provider may modify these instructions with an order on the day of surgery.

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ADDENDUM A

PRE-ANESTHESIA TESTING PROTOCOL SUMMARY of TESTING: Minimum Required Testing by Anesthesiology.
Based on patient condition: Primary Care Providers and Specialists may utilize other diagnostic testing or surgery preparation.
CBC should be ordered w/o differential

Medical Condition	DOS	Within 14 days of DOS	30 days	3 months	6 months	1 year
Anemia or Chronic Blood loss (active treatment, Hgb < 13)			H & H			
Angina (symptoms within 6 months)			H & H		EKG	
Arrhythmia with symptoms (except Ventricular Tachycardia)						EKG
Bleeding Disorder			*CBC			
Cardiovascular / Cerebrovascular Disease / Peripheral Vascular History (no active symptoms - 6 months)						EKG
Congestive Heart Failure with Dyspnea			H & H			
Chronic Kidney Disease			*BMP		BMP	EKG
CVA / TIA in the last 6 months			H & H			
Dysuria (active symptoms of urinary tract infection-painful urination)		UA / CS				
Dialysis ***Post dialysis***	K+		H & H			
Hematological disorder: *Active treatment* (ES, Leukemia, Lymphoma, MDS, PV)			*CBC			
Hematological disorder: *History of* (ES, Leukemia, Lymphoma, MDS, PV)					*CBC	
Hemochromatosis					H & H	
HIV (HIV with antiretroviral treatment)				*CBC CMP if Tx		
Idiopathic Thrombocytopenic Purpura		Platelets				
Liver Disease (Active Hepatitis B or C, Cirrhosis, Liver Failure)			PT / INR CMP		*CBC	
Radiation Treatment within the past 3 - months			*CBC			
Ventricular Tachycardia History of occurrence within 30 days			BMP			
Medication Therapy	**DOS**	**Within 14 days of DOS**	**30 days**	**3 months**	**6 months**	**1 year**
ACE inhibitor Repeat BMP if med change / IV contrast since most recent lab					BMP	
Anticonvulsants: Draw drug level if increase to normal seizure activity or dose change since last drug level						
Chemotherapy within past 3 - months (or after last chemotherapy treatment)			CBC		CMP	
Coumadin (PT / INR indicated within 14 days is generally completed by the coumadin clinic or prescribing MD) in order to create the appropriate bridge plan	PT / INR					
Digoxin: ***(Draw digoxin level if HR < 50 or > 100)***		K+ drug level				
Diuretic	K+				BMP	
Digoxin / diuretic & pre-procedure bowel prep (OR cases only, not endoscopy)	K+					
Immunosuppressive medication, excluding steroids ***Repeat test if no CMP since initiation of therapy***					CMP *CBC	
Lithium				BMP		
Prednisone or other Corticosteroids	CBG					
Theophylline level					Drug	
Special Attention Surgery Cases	**DOS**	**Within 14 days of DOS**	**30 days**	**3 months**	**6 months**	**1 year**
Scheduled surgery cases using IV Contrast agent (does not include green contrast for cholecystecomy)	creatinine	BMP				
Females: from menses to menopause except hysterectomy / BSO: Collect a Qualitative BHCG Urine test or waiver on day of surgery. Collect a Qualitative BHCG Serum test if specified in the surgeon / proceduralist order	BHCG if not prev done	BHCG wi 3 days				
Scheduled Surgery: ***Cardiac, Thoracic, Major Vascular, Intracranial.***		T & S	CBC			
Scheduled Surgery: ***Arthroplasty* (hip / knee / shoulder)**: T & S for revision. or bilateral surgery. UA, CBC, Chemistry only if indicated for conditions or medications listed above		T&S - bilateral or revision only	H & H			
Scheduled Surgery: ***Prostatectomy, Nephrectomy, Multi - level thoracic / lumbar spinal fusion. (No T /&S, H & H needed for anterior or posterior cervical unless ordered by surgeon)***		T & S		H & H		
Diabetes Management (defer to prescribing MD plan / instructions when available)	**DOS**	**Within 14 days of DOS**	**30 days**	**3 months**	**6 months**	**1 year**
Pre-Diabetes, Diet Controlled Diabetes, Oral agents: Do not take on the morning of procedure	CBG		BMP	HA1c (do prior to DOS)		EKG
Long acting Insulin: Take 80% of evening dose day prior to procedure and 80% of morning dose day of procedure if applicable. Intermediate / Mixed Insulin: Take 80% of doses day before procedure, 50% of morning dose day of procedure. Hold for BG less than 120 Short acting Insulin: Normal doses day before procedure. Hold day of procedure. Insulin pump: Set at basal rate on the day of procedure.	CBG		BMP			EKG

* Intermediate or High Risk Surgery: Cardiothoracic, intrathoracic, intra-abdominal, intra-pelvic, intracranial, lithotripsy, major plastic reconstruction, multi - level spine, orthopedic involving humerus/femur/tibia/pelvis, prostate resection or removal, major vascular, ventral hernia, patients on dialysis.

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