

SURGICAL INTERVENTION

Surgery may be needed to diagnose or cure a specific disease process, correct a structural deformity, restore a functional process, or reduce the level of dysfunction/pain. Although surgery is generally elective or preplanned, potentially life-threatening conditions can arise, requiring emergency intervention. Absence or limitation of preoperative preparation and teaching increases the need for postoperative support in addition to managing underlying medical conditions.

CARE SETTING

May be inpatient on a surgical unit or outpatient/short-stay in an ambulatory surgical setting.

RELATED CONCERNS

Alcohol: acute withdrawal
Cancer
Diabetes mellitus/diabetic ketoacidosis
Fluid and electrolyte imbalances
Hemothorax/pneumothorax
Metabolic acidosis (primary base bicarbonate deficit)
Metabolic alkalosis (primary base bicarbonate excess)
Peritonitis
Pneumonia, microbial
Psychosocial aspects of care
Respiratory acidosis (primary carbonic acid excess)
Respiratory alkalosis (primary carbonic acid deficit)
Sepsis/septicemia
Thrombophlebitis: deep vein thrombosis
Total nutritional support: parenteral/enteral feeding
Also refer to plan of care for specific surgical procedure performed.

Patient Assessment Database

Data depend on the duration/severity of underlying problem and involvement of other body systems. Refer to specific plans of care for data and diagnostic studies relevant to the procedure and additional nursing diagnoses.

CIRCULATION

May report: History of cardiac problems, heart failure (HF), pulmonary edema, peripheral vascular disease, or vascular stasis (increases risk of thrombus formation)

May exhibit: Changes in heart rate (sympathetic stimulation)

EGO INTEGRITY

May report: Feelings of anxiety, fear, anger, apathy
Multiple stress factors, e.g., financial, relationship, lifestyle

May exhibit: Restlessness, increased tension/irritability
Sympathetic stimulation, e.g., changes in heart rate (HR), respiratory rate

ELIMINATION

May report: History of kidney/bladder conditions; use of diuretics/laxatives
Change in bowel habits

May exhibit: Abdominal tenderness, distension
Absence of bowel elimination
Decreased or absence of urinary elimination

FOOD/FLUID

May report: Pancreatic insufficiency/diabetes mellitus (DM) (predisposing to

hypoglycemia/ketoacidosis)
Use of diuretics
May exhibit: Malnutrition (including obesity)
Dry mucous membranes (limited intake/nothing-by-mouth [NPO] period preoperatively)

RESPIRATION

May report: Infections, chronic conditions/cough, smoking
May exhibit: Changes in respiratory rate (respiratory pathology or sympathetic stimulation)

SAFETY

May report: Allergies or sensitivities to medications, iodine, food, tape, latex, and solution(s)
Immune deficiencies (increase risk of systemic infections and delayed healing)
Presence of cancer/recent cancer therapy
Family history of malignant hyperthermia/reaction to anesthesia, autoimmune diseases
History of hepatic disease (affects drug detoxification and may alter coagulation)
History of blood transfusion(s)/transfusion reaction
May exhibit: Presence of existing infectious process; fever

TEACHING/LEARNING

May report: Use of medications such as anticoagulants, steroids, nonsteroidal anti-inflammatories, antibiotics, antihypertensives, cardiotoxic glycosides, antidysrhythmics, bronchodilators, diuretics, decongestants, analgesics, anti-inflammatories, anticonvulsants, or antipsychotics/anti-anxiety agents, as well as over-the-counter (OTC) medications, herbal supplements, or alcohol or other drugs of abuse (risk of liver damage affecting coagulation and choice of anesthesia, as well as potential for postoperative withdrawal)

Discharge plan **DRG projected mean length of stay: 2.6 days for inpatient procedures, 2–36 hr for outpatient**

considerations: May require temporary assistance with transportation, dressing(s)/supplies, self-care, and homemaker/maintenance tasks
Possible placement in rehabilitation/extended care facility
Refer to section at end of plan for postdischarge considerations.

DIAGNOSTIC STUDIES

General preoperative requirements may include: Complete blood count (CBC), prothrombin time (PT)/activated partial thromboplastin time (aPTT), chest x-ray. Other studies depend on type of operative procedure, underlying medical conditions, current medications, age, and weight. These tests may include blood urea nitrogen (BUN), creatinine (Cr), glucose, arterial blood gases (ABGs), electrolytes; liver function, thyroid, nutritional studies, electrocardiogram (ECG). Deviations from normal should be corrected if possible, for safe administration of anesthetic agents.

CBC: An elevated white blood cell (WBC) count is indicative of inflammatory process (may be diagnostic, e.g., appendicitis); decreased WBC count suggests viral processes (requiring evaluation because immune system may be dysfunctional). Low hemoglobin (Hb) suggests anemia/blood loss (impairs tissue oxygenation and reduces the Hb available to bind with inhalation anesthetics); may suggest need for cross-match/blood transfusion. An elevated hematocrit (Hct) may indicate dehydration; decreased Hct suggests fluid overload.

Electrolytes: Imbalances impair organ function, e.g., decreased potassium affects cardiac muscle contractility, leading to decreased cardiac output.

ABGs: Evaluates current respiratory status, which may be especially important in smokers, patients with chronic lung diseases.

Coagulation times: May be prolonged, interfering with intraoperative/postoperative hemostasis; hypercoagulation increases risk of thrombosis formation, especially in conjunction with dehydration and decreased mobility associated with surgery.

Urinalysis: Presence of WBCs or bacteria indicates infection. Elevated specific gravity may reflect dehydration.

Pregnancy test: Positive results affect timing of procedure and choice of pharmacological agents.

Chest x-ray: Should be free of infiltrates, pneumonia; used for identification of masses and chronic obstructive pulmonary disease (COPD).

ECG: Abnormal findings require attention before administering anesthetics.

NURSING PRIORITIES

1. Reduce anxiety and emotional trauma.
2. Provide for physical safety.
3. Prevent complications.
4. Alleviate pain.
5. Facilitate recovery process.
6. Provide information about disease process/surgical procedure, prognosis, and treatment needs.

DISCHARGE GOALS

1. Patient dealing realistically with current situation.
2. Injury prevented.
3. Complications prevented/minimized.
4. Pain relieved/controlled.
5. Wound healing/organ function progressing toward normal.
6. Disease process/surgical procedure, prognosis, and therapeutic regimen understood.
7. Plan in place to meet needs after discharge.

PREOPERATIVE

NURSING DIAGNOSIS: Knowledge, deficient [Learning Need] regarding condition, prognosis, treatment, self-care, and discharge needs

May be related to
 Lack of exposure/recall, information misinterpretation
 Unfamiliarity with information resources

Possibly evidenced by
 Statement of the problem/concerns, misconceptions
 Request for information
 Inappropriate, exaggerated behaviors (e.g., agitated, apathetic, hostile)
 Inaccurate follow-through of instructions, development of preventable complications

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Knowledge: Treatment Procedure(s) (NOC)
 Verbalize understanding of disease process/perioperative process and postoperative expectations.
 Correctly perform necessary procedures and explain reasons for the actions.
 Initiate necessary lifestyle changes and participate in treatment regimen.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Teaching: Preoperative (NIC)</p> <p>Independent</p> <p>Assess patient’s level of understanding.</p> <p>Review specific pathology and anticipated surgical procedure. Verify that appropriate consent has been signed.</p>	<p>Facilitates planning of preoperative teaching program, identifies content needs.</p> <p>Provides knowledge base from which patient can make informed therapy choices and consent for procedure, and presents opportunity to clarify misconceptions.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Teaching: Preoperative (NIC)</p> <p>Independent</p> <p>Use resource teaching materials, audiovisuals as available.</p> <p>Implement individualized preoperative teaching program: Preoperative/postoperative procedures and expectations, urinary and bowel changes, dietary considerations, activity levels/transfers, respiratory/cardiovascular exercises; anticipated IV lines and tubes (e.g., nasogastric [NG] tubes, drains, and catheters);</p> <p>Preoperative instructions, e.g., bowel prep, NPO time, shower/skin preparation, which routine medications to take/hold, e.g., prophylactic antibiotics or anticoagulants, anesthesia premedication;</p> <p>Intraoperative patient safety, e.g., positional needs due to arthritis, previous injury, or current mobility, not crossing legs during procedures performed under local/light anesthesia;</p> <p>Expected/transient reactions (e.g., low backache, localized numbness and reddening or skin indentations);</p> <p>Inform patient/SO about timely arrival on surgical day, itinerary, physician/SO communications.</p> <p>Discuss/develop individual postoperative pain management plan. Identify misconceptions patient may have and provide appropriate information including use of 0–10 pain assessment scale.</p> <p>Provide opportunity to practice coughing, deep breathing, and muscular exercises.</p>	<p>Specifically designed materials can facilitate patient’s learning.</p> <p>Enhances patient’s understanding/control and can relieve stress related to the unknown/unexpected.</p> <p>Helps reduce the possibility of postoperative complications and promotes a rapid return to normal body function. <i>Note:</i> In some instances, liquids and medications are allowed up to 2 hr before scheduled procedure.</p> <p>Reduced risk of complications/untoward outcomes, such as muscular, nerve, or joint soreness (e.g., injury to the peroneal and tibial nerves with postoperative pain in the calves and feet).</p> <p>Minor effects of immobilization/positioning should resolve in 24 hr. If they persist, medical evaluation is required.</p> <p>Logistical information about preoperative preparation time, operating room (OR) schedule and locations (e.g., recovery room, postoperative room assignment), as well as where and when the surgeon will communicate with SO relieves stress and miscommunications, preventing confusion and doubt over patient’s well-being.</p> <p>Increases likelihood of successful pain management. Some patients may expect to be pain-free or fear becoming addicted to narcotic agents.</p> <p>Enhances learning and continuation of activity postoperatively.</p>

NURSING DIAGNOSIS: Fear/Anxiety [specify level]

May be related to

Situational crisis; unfamiliarity with environment
Change in health status; threat of death
Separation from usual support systems

Possibly evidenced by

Increased tension, apprehension, decreased self-assurance, behavior regression
Expressed concern regarding changes, fear of consequences
Facial tension, restlessness, focus on self
Sympathetic stimulation

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Anxiety [or] Fear Control (NOC)

Acknowledge feelings and identify healthy ways to deal with them.
Appear relaxed, able to rest/sleep appropriately.
Report decreased fear and anxiety reduced to a manageable level.
Demonstrate ability to carry out procedure requirements

ACTIONS/INTERVENTIONS	RATIONALE
<p>Preoperative Coordination (NIC)</p> <p>Independent</p> <p>Provide preoperative education, including visit with OR personnel before surgery when possible. Discuss/demonstrate routine procedures/processes that may frighten/concern patient, e.g., masks, lights, IVs, BP cuff, electrodes, bovie pad, feel of oxygen cannula/mask on nose or face, autoclave and suction noises, child crying.</p> <p>Inform patient/SO of nurse's intraoperative advocate role.</p> <p>Tell patient anticipating local/regional anesthesia that drowsiness/sleep occurs, that more sedation may be requested and will be given if needed, and that surgical drapes will block view of the operative field.</p> <p>Surgical Preparation (NIC)</p> <p>Identify fear levels that may necessitate postponement of surgical procedure.</p>	<p>Can provide reassurance and alleviate patient's anxiety, as well as provide information for formulating intraoperative care. Acknowledges that foreign environment may be frightening, alleviates associated fears. Decreased anxiety level reduces elevation of glucocorticosteroid levels, which can interfere with healing.</p> <p>Develops trust/rapport, decreasing fear of loss of control in a foreign environment. Provides patient/SO with contact person.</p> <p>Reduces concerns that patient may "see" the procedure.</p> <p>Overwhelming or persistent fears result in excessive stress reaction, increasing glucocorticosteroid levels, potentiating risk of adverse reaction to procedure and anesthetic agents, and impairing healing.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Surgical Preparation (NIC)</p> <p>Independent</p> <p>Validate source of fear. Provide accurate factual information. Active-Listen concerns.</p> <p>Note expressions of distress/feelings of helplessness, preoccupation with anticipated change/loss, choked feelings.</p> <p>Introduce patient to staff at time of transfer to operating suite.</p> <p>Validate patient identification band, chart, and signed operative consent with surgery schedule with patient and OR team.</p> <p>Prevent unnecessary body exposure during transfer and in OR suite.</p> <p>Give simple, concise directions/explanations to sedated patient. Review environmental concerns as needed.</p> <p>Control external stimuli.</p>	<p>Identification of specific fear helps patient deal realistically with it, e.g., misidentification/wrong operation, dismemberment, disfigurement, loss of dignity/control, or being awake/aware with local anesthesia. Patient may have misinterpreted preoperative information or have misinformation regarding surgery/disease process. Fears regarding previous experiences of self/family/acquaintances may be unresolved.</p> <p>Patient may already be grieving for the loss represented by the anticipated surgical procedure/diagnosis/prognosis of illness.</p> <p>Establishes trust, rapport, and psychological comfort with operative team</p> <p>Provides for positive patient identification, correct surgery and site, thereby reducing patient fear that wrong procedure may be done.</p> <p>Preserves patient's modesty, reduces fear of loss of dignity and inability to exercise control, and reinforces nurse advocacy role.</p> <p>Impairment of thought processes makes it difficult for patient to understand lengthy instructions.</p> <p>Extraneous noises and commotion may accelerate anxiety.</p>
<p>Collaborative</p> <p>Refer to pastoral spiritual care, surgeon, anesthesiologist, clinical manager, psychiatric clinical nurse specialist for further evaluation/counseling as indicated.</p> <p>Discuss postponement/cancellation of surgery with physician, anesthesiologist, patient, and family as appropriate.</p> <p>Administer medications as indicated, e.g.:</p> <p style="padding-left: 40px;">Sedatives, hypnotics;</p> <p style="padding-left: 40px;">IV antianxiety agents.</p>	<p>May be desired or required for patient to deal with fear, especially concerning life-threatening conditions, serious and/or high-risk procedures.</p> <p>May be necessary if overwhelming fears are not reduced/resolved.</p> <p>Used to promote sleep the evening before surgery; may enhance coping abilities.</p> <p>May be provided in the outpatient admitting/preoperative holding area to reduce nervousness and provide comfort. <i>Note:</i> Respiratory depression/bradycardia may occur, necessitating prompt intervention.</p>

INTRAOPERATIVE

<p>NURSING DIAGNOSIS: Perioperative Positioning Injury, risk for</p> <p>Risk factors may include Disorientation; sensory/perceptual disturbances due to anesthesia Immobilization; musculoskeletal impairments Obesity/emaciation; edema</p> <p>Possibly evidenced by [Not applicable; presence of signs and symptoms establishes an <i>actual</i> diagnosis.]</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Safety Status: Physical Injury (NOC) Be free of injury related to perioperative disorientation. Be free of untoward skin/tissue injury or changes lasting beyond 24–48 hr following procedure. Report resolution of localized numbness, tingling, or changes in sensation related to positioning within 24–48 hr as appropriate.</p>
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ACTIONS/INTERVENTIONS	RATIONALE
<p>Positioning Intraoperative (NIC)</p> <p>Independent</p> <p>Note anticipated length of procedure and customary position. Provide for potential complications.</p> <p>Review patient’s history, noting age, weight/height, nutritional status, physical limitation/preexisting conditions that may affect choice of position and skin/tissue integrity during surgery.</p> <p>Stabilize both patient cart and OR table when transferring patient to and from OR table, using an adequate number of personnel for transfer and support of extremities.</p> <p>Anticipate movement of extraneous lines and tubes during the transfer, and secure or guide them into position.</p> <p>Secure patient on OR table with safety belt and arm protection as appropriate, explaining necessity for safety precaution.</p> <p>Protect body from contact with metal parts of the</p>	<p>Supine position may cause low back pain and skin pressure at heels/elbows/sacrum; lateral chest position can cause shoulder and neck pain, plus eye and ear injury on patient’s downside.</p> <p>Many conditions (e.g., lack of subcutaneous padding in elderly person, arthritis, thoracic outlet/cubital tunnel syndrome, diabetes, obesity, presence of abdominal stoma, peripheral vascular disease, level of hydration, temperature of extremities) can make individual prone to injury.</p> <p>Unstabilized cart/table can separate, causing patient to fall. Both side rails must be in the down position for caregiver(s) to assist patient transfer and prevent loss of balance.</p> <p>Prevents undue tension and dislocation of IV lines, NG tubes, catheters, and chest tubes; maintains gravity drainage when appropriate.</p> <p>OR tables and armboards are narrow, placing patient at risk for injury, especially during fasciculation. Patient may become resistive or combative when sedated or emerging from anesthesia, furthering potential for injury.</p> <p>Reduces risk of electrical injury.</p>

operating table.	
<p>ACTIONS/INTERVENTIONS</p> <p>Positioning Intraoperative (NIC)</p> <p>Independent</p> <p>Prepare equipment and padding for required position, according to operative procedure and patient's specific needs. Pay special attention to pressure points of bony prominences (e.g., arms, ankles), neurovascular pressure points and soft tissue (e.g., breasts, knees).</p> <p>Position extremities so they may be periodically checked for safety, circulation, nerve pressure, and alignment. Monitor peripheral pulses, skin color/temperature.</p> <p>Place legs in stirrups simultaneously (when lithotomy position used), adjusting stirrup height to patient's legs, maintaining symmetrical position. Pad popliteal space and heels/feet as indicated.</p> <p>Provide footboard/elevate drapes off toes, decrease blanket weight on extremities. Avoid/monitor equipment and instrumentation placement on trunk/extremities during procedure.</p> <p>Reposition slowly at transfer from OR table to bed.</p> <p>Determine specific postoperative positioning guidelines, e.g., elevation of head of bed following spinal anesthesia or nose and throat surgery, turn to unoperated side following pneumonectomy.</p> <p>Collaborative</p> <p>Recommend position changes to anesthesiologist and/or surgeon as appropriate.</p>	<p>RATIONALE</p> <p>Depending on individual patient's size, weight, and preexisting conditions, extra padding materials may be required to protect bony prominences, prevent circulatory compromise/nerve pressure, or allow for optimum chest expansion for ventilation.</p> <p>Prevents accidental trauma, e.g., hands, fingers, and toes could inadvertently be scraped, pinched, or amputated by moving table attachments; positional pressure of brachial plexus, peroneal, and ulnar nerves can cause serious neurovascular problems with extremities; prolonged plantar flexion may result in footdrop.</p> <p>Prevents muscle strain; reduces risk of hip dislocation in elderly patients. Padding helps prevent peroneal and tibial nerve damage. <i>Note:</i> Prolonged positioning in stirrups may lead to compartmental syndrome in calf muscles.</p> <p>Pressure may cause neural, circulatory, and skin integrity disruption.</p> <p>Myocardial depressant effect of various agents increases risk of hypotension and/or bradycardia. Controlling movement enhances volume accommodation.</p> <p>Reduces risk of postoperative complications, e.g., headache associated with migration of spinal anesthesia, or loss of maximal respiratory effort.</p> <p>Close attention to proper positioning can prevent muscle strain, nerve damage, circulatory compromise, and undue pressure on skin/bony prominences. Although the anesthesiologist is responsible for positioning, the nurse may be able to see/have more time to note patient needs and provide assistance.</p>

NURSING DIAGNOSIS: Injury, risk for

Risk factors may include

Interactive conditions between individual and environment

External environment, e.g., physical design, structure of environment, exposure to equipment, instrumentation, positioning, use of pharmaceutical agents

Internal environment, e.g., tissue hypoxia, abnormal blood profile/altered clotting factors, broken skin

Possibly evidenced by

[Not applicable; presence of signs and symptoms establishes an *actual* diagnosis.]

DESIRED OUTCOMES/EVALUATION CRITERIA—CAREGIVER WILL:

Risk Control (NOC)

Identify individual risk factors.

Modify environment as indicated to enhance safety and use resources appropriately.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Surgical Precautions (NIC)</p> <p>Independent</p> <p>Remove dentures, partial plates, or bridges preoperatively per protocol. Inform anesthesiologist of problems with natural teeth, e.g., loose teeth.</p> <p>Remove prosthetics, other devices preoperatively or after induction, depending on sensory/perceptual alterations and mobility impairment.</p> <p>Remove jewelry preoperatively. Tape over, or isolate from skin according to institution protocol. Remove piercing hardware.</p> <p>Verify patient identity and scheduled operative procedure by comparing patient chart, arm band, and surgical schedule. Verbally ascertain correct name, procedure, operative site, and physician.</p> <p>Document allergies, including risk for adverse reaction to latex, tape, and prep solutions.</p> <p>Give simple and concise directions to sedated patient.</p>	<p>Foreign bodies may be aspirated during endotracheal intubation/extubation.</p> <p>Contact lenses may cause corneal abrasions while under anesthesia; eyeglasses and hearing aids are obstructive and may break; however, patients may feel more in control of environment if hearing and visual aids are left on as long as possible. Artificial limbs may be damaged and skin integrity impaired if left on.</p> <p>Metals conduct electrical current and provide an electrocautery hazard. Piercings may be “snagged,” resulting in soft-tissue injury. In addition, loss or damage to patient’s personal property can easily occur in the foreign environment. <i>Note:</i> In some cases (e.g., arthritic knuckles), it may not be possible to remove rings without cutting them off. In this situation, applying tape over the ring may prevent patient from “catching” ring and prevent loss of stone or damage to finger.</p> <p>Ensures correct patient, procedure, and appropriate extremity/side.</p> <p>Reduces risk for allergic responses that may impair skin integrity or lead to life-threatening systemic reactions.</p> <p>Impairment of thought process makes it difficult for patient to understand lengthy directions.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Surgical Precautions (NIC)</p> <p>Independent</p> <p>Prevent pooling of prep solutions under and around patient.</p> <p>Assist with induction as needed; e.g., stand by to apply cricoid pressure during intubation or stabilize position during lumbar puncture for spinal block.</p> <p>Verify electrical safety of equipment used in surgical procedure, e.g., intact cords, grounds, medical engineering verification labels.</p> <p>Place dispersive electrode (electrocautery pad) over largest available muscle mass, closest to surgical site, ensuring its contact.</p> <p>Confirm and document correct sponge, instrument, needle, and blade counts.</p>	<p>Antiseptic solutions may chemically burn skin, as well as conduct electricity.</p> <p>Facilitates safe administration of anesthesia.</p> <p>Malfunction of equipment can occur during the operative procedure, causing not only delays and unnecessary anesthesia but also injury or death, e.g., short circuits, faulty grounds, laser malfunctions, or laser misalignment. Periodic electrical safety checks are imperative for all OR equipment.</p> <p>Provides for shortest distance and maximum conduction to ground to prevent electrical burns.</p> <p>Foreign bodies remaining in body cavities at closure may result in inflammation, infection, perforation, and abscess formation, and disastrous complications leading to death.</p>
<p>Laser Precautions (NIC)</p> <p>Verify credentials of laser operators for specific wavelength laser required for particular procedure.</p> <p>Confirm presence of fire extinguishers and wet fire smothering materials when lasers are used intraoperatively.</p> <p>Apply patient and personnel eye protection before laser activation.</p> <p>Protect surrounding skin and anatomy appropriately, i.e., wet towels, sponges, dams, cottonoids.</p>	<p>Because of the potential hazards of laser, physician and equipment operators must be certified in the use and safety requirements of specific wavelength laser and procedure, i.e., open, endoscopic, abdominal, laryngeal, intrauterine.</p> <p>Laser beam may inadvertently contact and ignite combustibles outside of surgical site, e.g., drapes, sponges.</p> <p>Eye protection for specific laser wavelength must be used to prevent injury.</p> <p>Prevents inadvertent skin integrity disruption, hair ignition, and adjacent anatomy injury in area of laser beam use.</p>
<p>Specimen Management (NIC)</p> <p>Handle, label, and document specimens appropriately, ensuring proper medium and transport for tests required.</p>	<p>The OR nurse advocate must properly identify specimens to patient, site, and test to ensure validity and maximum patient outcome. Loss or mislabeling of specimens renders the surgical procedure fruitless and grossly compromises further treatment and patient outcome. Frozen sections, preserved or fresh examination, and cultures all have different medium and transfer requirements.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Fluid Management (NIC)</p> <p>Independent</p> <p>Observe intake and output (I&O) during procedure. Anticipate need for volume replacement/rapid infusion via infusion pumps and set up appropriately.</p> <p>Collaborative</p> <p>Administer IV fluids, blood/blood components, and medications, e.g., aprotinin (Trasylol), desmopressin (DDAVP), as indicated.</p> <p>Collect autologous blood intraoperatively as appropriate.</p> <p>Surgical Precautions (NIC)</p> <p>Administer antacids, H₂ blocker, preoperatively as indicated.</p> <p>Monitor dosage of local anesthetics with or without epinephrine in both regional and general anesthetized patients.</p>	<p>Potential for fluid volume deficit or excess exists, affecting safety of anesthesia, tissue perfusion, organ function, and patient well-being.</p> <p>Maintains homeostasis and adequate level of sedation/muscle relaxation to produce optimal surgical outcome. <i>Note:</i> Trasylol or DDAVP may be given before or during procedure to reduce blood loss/promote clotting.</p> <p>Blood lost intraoperatively may be collected, filtered, and reinfused either intraoperatively or postoperatively. A continuous, closed circuit must be maintained for the procedure to be acceptable for use by Jehovah's Witnesses. <i>Note:</i> Alternatively, red blood cell (RBC) production may be increased by the administration of epoetin (Epogen, Procrit) for up to 3 wk preoperatively, reducing the need for blood transfusion whether autologous or donated.</p> <p>Neutralizes gastric acidity and may reduce risk of aspiration/severity of pneumonia should aspiration occur, especially in obese/pregnant patients in whom there is an 85% risk of mortality with aspiration. <i>Note:</i> Ranitidine (Zantac) has been found to reduce postoperative infections in acute colorectal surgery.</p> <p>Local agents with/without epinephrine over recommended dosages may potentiate cardiovascular compromise.</p>

<p>NURSING DIAGNOSIS: Infection, risk for</p> <p>Risk factors may include</p> <p>Broken skin, traumatized tissues, stasis of body fluids Presence of pathogens/contaminants, environmental exposure, invasive procedures</p> <p>Possibly evidenced by</p> <p>[Not applicable; presence of signs and symptoms establishes an <i>actual</i> diagnosis.]</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—CAREGIVER WILL:</p> <p>Knowledge: Infection Control (NOC)</p> <p>Identify individual risk factors and interventions to reduce potential for infection. Maintain safe aseptic environment.</p>
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ACTIONS/INTERVENTIONS	RATIONALE
<p>Infection Control: Intraoperative (NIC)</p> <p>Independent</p> <p>Adhere to facility infection control, sterilization, and aseptic policies/procedures.</p> <p>Verify sterility of all items used in procedure as event related.</p> <p>Verify sterilized item integrity.</p> <p>Review laboratory studies for systemic infections and scrutinize operative area for possibility of localized infections.</p> <p>Verify that preoperative skin, vaginal, and bowel cleansing procedures have been done as needed depending on specific surgical procedure.</p> <p>Prepare operative site according to specific procedures.</p> <p>Examine skin for breaks or irritation, signs of infection.</p> <p>Maintain dependent gravity drainage of indwelling catheters, tubes, and positive pressure of parenteral or irrigation lines.</p> <p>Identify breaks in aseptic technique and resolve immediately on occurrence.</p> <p>Utilize universal precautions by containing contaminated fluids/materials to specific site in operating room suite and dispose of according to hospital protocol.</p> <p>Apply sterile dressing.</p> <p>Monitor blood glucose levels of diabetic patients as indicated.</p>	<p>Established mechanisms designed to prevent infection.</p> <p>Prepackaged items may appear to be sterile; however, each item must be scrutinized for manufacturer’s sterility statement or central sterile processing indicators, package integrity, environmental effect on package, and delivery techniques.</p> <p>Package content integrity expiration dates dictate item use time elements, i.e., deterioration of contents, lot/serial numbers must be documented on implant items for further follow-up.</p> <p>Increased WBC count may indicate ongoing infection, which the operative procedure will alleviate (e.g., appendicitis, abscess, inflammation from trauma). Presence of local or systemic infection may contraindicate or adversely affect the surgical procedure and/or anesthesia, e.g., upper respiratory infection (URI), urinary tract infection (UTI), skin lesions, or unknown infections.</p> <p>Cleansing reduces bacterial counts on the skin, vaginal mucosa, and alimentary tract.</p> <p>Minimizes bacterial counts at operative site.</p> <p>Disruptions of skin integrity at or near the operative site are sources of contamination to the incision. Careful shaving/clipping as close as possible to incision time will prevent skin abrasions, which potentiate skin infection.</p> <p>Prevents stasis and reflux of body fluids.</p> <p>Contamination by environmental/personnel contact renders the sterile field unsterile, thereby increasing the risk of infection.</p> <p>Containment of blood and body fluids, tissue, and materials in contact with an infected wound/patient will prevent spread of infection to environment and other patients and personnel.</p> <p>Prevents environmental contamination of fresh wound.</p> <p>Depending on length of procedure and type of IV fluids provided, intervention may be required to maintain preferred blood levels.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Infection Control: Intraoperative (NIC)</p> <p>Collaborative</p> <p>Provide copious wound irrigation, e.g., saline, water, antibiotic, or antiseptic.</p> <p>Obtain specimens for cultures/Gram stain.</p> <p>Administer antibiotics as indicated.</p>	<p>May be used intraoperatively to reduce bacterial counts at surgical site and cleanse the wound of debris, e.g., bone, ischemic tissue, bowel contaminants, toxins.</p> <p>Immediate identification of infective organism type by Gram stain allows prompt treatment; more specific identification by cultures can be obtained in hours/days.</p> <p>May be given prophylactically for suspected infection or contamination.</p>

<p>NURSING DIAGNOSIS: Body Temperature, risk for imbalanced</p> <p>Risk factors may include</p> <p>Exposure to cool environment</p> <p>Use of medications, anesthetic agents</p> <p>Extremes of age, weight; dehydration</p> <p>Possibly evidenced by</p> <p>[Not applicable; presence of signs and symptoms establishes an <i>actual</i> diagnosis.]</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA— PATIENT WILL:</p> <p>Thermoregulation (NOC)</p> <p>Maintain body temperature within normal range.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Temperature Regulation: Intraoperative (NIC)</p> <p>Independent</p> <p>Note preoperative temperature related to age and disease process.</p> <p>Assess environmental temperature and modify as needed, e.g., provide warming or cooling blankets, increase room temperature.</p> <p>Cover skin areas outside of operative field.</p>	<p>Used as baseline for monitoring intraoperative temperature. Preoperative temperature elevations may be indicative of disease process, e.g., appendicitis, abscess, or systemic disease requiring perioperative treatment.</p> <p><i>Note:</i> Effects of aging on hypothalamus may decrease fever response to infection.</p> <p>Manipulating ambient air around patient will prevent heat loss.</p> <p>Heat losses will occur as skin and mucous membranes are exposed to cool environmental temperatures, e.g., legs, arms, head, mucosa.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Temperature Regulation: Intraoperative (NIC)</p> <p>Independent</p> <p>Provide cooling measures for patient with preoperative or intraoperative temperature elevations.</p> <p>Increase ambient room temperature (e.g., to 78°F or 80°F) at conclusion of procedure.</p> <p>Apply warming blankets at emergence from anesthesia.</p> <p>Collaborative</p> <p>Monitor temperature throughout intraoperative phase.</p> <p>Malignant Hyperthermia Precautions (NIC)</p> <p>Respond promptly to symptoms of malignant hyperthermia (MH), i.e., rapid temperature elevation/persistent high fever:</p> <p>Provide iced saline to all body surfaces and orifices;</p> <p>Obtain dantrolene (Dantrium) for IV administration per protocol.</p>	<p>Cool irrigations and exposure of skin surfaces to air may be required to decrease temperature.</p> <p>Helps limit patient heat loss when drapes are removed and patient is prepared for transfer.</p> <p>Inhalation anesthetics depress the hypothalamus, resulting in poor body temperature regulation.</p> <p>Continuous warm/cool humidified inhalation anesthetics are used to maintain humidity and temperature balance within the tracheobronchial tree. Temperature fluctuations may indicate adverse response to anesthesia. <i>Note:</i> Use of atropine or scopolamine may further increase temperature.</p> <p>Prompt recognition and immediate action to control temperature is necessary to prevent serious complications/death.</p> <p>Iced solution lavage of body surfaces and cavities will reduce body temperature.</p> <p>Prevents intense catabolic process associated with malignant hyperthermia.</p>

POSTOPERATIVE

<p>NURSING DIAGNOSIS: Breathing Pattern, ineffective</p> <p>May be related to</p> <ul style="list-style-type: none"> Neuromuscular, perceptual/cognitive impairment Decreased lung expansion, energy Tracheobronchial obstruction <p>Possibly evidenced by</p> <ul style="list-style-type: none"> Changes in respiratory rate and depth Reduced vital capacity, apnea, cyanosis, noisy respirations <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Respiratory Status: Ventilation (NOC)</p> <p>Establish a normal/effective respiratory pattern free of cyanosis or other signs of hypoxia.</p>
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ACTIONS/INTERVENTIONS	RATIONALE
<p>Postanesthesia Care (NIC)</p> <p>Independent</p> <p>Maintain patient airway by head tilt, jaw hyperextension, oral pharyngeal airway.</p> <p>Auscultate breath sounds. Listen for gurgling, wheezing, crowing, and/or silence after extubation.</p> <p>Observe respiratory rate and depth, chest expansion, use of accessory muscles, retraction or flaring of nostrils, skin color; note airflow.</p> <p>Monitor vital signs continuously.</p> <p>Position patient appropriately, depending on respiratory effort and type of surgery.</p> <p>Observe for return of muscle function, especially respiratory.</p> <p>Initiate “stir-up” (turn, cough, deep-breathe) regimen as soon as patient is reactive and continue in the postoperative period.</p> <p>Observe for excessive somnolence.</p> <p>Elevate head of bed as appropriate to surgical procedure. Get patient out of bed as soon as possible.</p> <p>Suction as necessary.</p> <p>Collaborative</p> <p>Administer supplemental O₂ as indicated.</p>	<p>Prevents airway obstruction.</p> <p>Lack of breath sounds is indicative of obstruction by mucus or tongue and may be corrected by positioning and/or suctioning. Diminished breath sounds suggest atelectasis. wheezing indicates bronchospasm, whereas crowing or silence reflects partial-to-total laryngospasm.</p> <p>Ascertain effectiveness of respirations immediately so corrective measures can be initiated.</p> <p>Increased respirations, tachycardia, and/or bradycardia suggests hypoxia.</p> <p>Head elevation and left lateral Sims’ position prevents aspiration of secretions/vomitus; enhances ventilation to lower lobes and relieves pressure on diaphragm.</p> <p>After administration of intraoperative muscle relaxants, return of muscle function occurs first to the diaphragm, intercostals, and larynx; followed by large muscle groups, neck, shoulders, and abdominal muscles; then by midsize muscles, tongue, pharynx, extensors, and flexors; and finally by eyes, mouth, face, and fingers.</p> <p>Active deep ventilation inflates alveoli, breaks up secretions, increases O₂ transfer, and removes anesthetic gases; coughing enhances removal of secretions from the pulmonary system. <i>Note:</i> Respiratory muscles weaken and atrophy with age, possibly hampering elderly patient’s ability to cough or deep-breathe effectively.</p> <p>Narcotic-induced respiratory depression or presence of muscle relaxants in the body may be cyclical in recurrence, creating sine-wave pattern of depression and reemergence from anesthesia.</p> <p>Promotes maximal expansion of lungs, decreasing risk of pulmonary complications.</p> <p>Airway obstruction can occur as a result of blood or mucus in throat or trachea.</p> <p>Maximizes oxygen for uptake to bind with Hb in place of anesthetic gases to enhance removal of inhalation agents.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Postanesthesia Care (NIC)</p> <p>Collaborative</p> <p>Administer IV medications, e.g., naloxone (Narcan) or doxapram (Dopram).</p> <p>Provide/maintain ventilator assistance.</p> <p>Assist with use of respiratory aids, e.g., incentive spirometer.</p>	<p>Narcan reverses narcotic-induced central nervous system (CNS) depression; Dopram stimulates respiratory muscles. The effects of both drugs are cyclic in nature and respiratory depression may return.</p> <p>Depending on cause of respiratory depression or type of surgery (e.g., pulmonary, extensive abdominal, cardiac), endotracheal tube (ET) may be left in place and mechanical ventilation maintained for a time.</p> <p>Maximal respiratory efforts reduce potential for atelectasis and infection.</p>

<p>NURSING DIAGNOSIS: Sensory Perception, disturbed: (specify)/Thought Processes, disturbed May be related to Chemical alteration: use of pharmaceutical agents, hypoxia Therapeutically restricted environments; excessive sensory stimuli Physiological stress</p> <p>Possibly evidenced by Disorientation to person, place, time; change in usual response to stimuli; impaired ability to concentrate, reason, make decisions Motor incoordination</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL: Cognitive Ability (NOC) Regain usual level of consciousness/mentation. Recognize limitations and seek assistance as necessary.</p>
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ACTIONS/INTERVENTIONS	RATIONALE
<p>Postanesthesia Care (NIC)</p> <p>Independent</p> <p>Reorient patient continuously when emerging from anesthesia; confirm that surgery is completed.</p> <p>Speak in normal, clear voice without shouting, being aware of what you are saying. Minimize discussion of negatives (e.g., patient/personnel problems) within patient's hearing. Explain procedures and environmental events, even if patient does not seem aware.</p>	<p>As patient regains consciousness, support and assurance of current physical status will help alleviate anxiety.</p> <p>The nurse cannot tell when patient is aware, but it is thought that the sense of hearing returns before patient appears fully awake, so it is important not to say things that may be misinterpreted. Providing factual information helps patient preserve dignity and prepare for next recuperative activity.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Postanesthesia Care (NIC)</p> <p>Independent</p> <p>Evaluate sensation/movement of extremities and trunk as appropriate.</p> <p>Use bedrail padding and medical safety devices (restraints) as necessary.</p> <p>Secure parenteral lines, ET tube, catheters, if present, and check for patency.</p> <p>Maintain quiet, calm environment.</p> <p>Investigate changes in sensorium.</p> <p>Observe for hallucinations, delusions, depression, or an excited state.</p> <p>Reassess sensory, motor, and cognition function thoroughly before discharge.</p>	<p>Return of function following local or spinal nerve blocks depends on type/amount of agent used and duration of procedure.</p> <p>Provides for patient safety/protection from environment during emergence state. Prevents injury to head and extremities if patient becomes combative while disoriented.</p> <p>Disoriented patient may pull on lines and drainage systems, disconnecting or kinking them.</p> <p>External stimuli, such as noise, lights, touch, may cause psychic aberrations when dissociative anesthetics (e.g., ketamine) have been administered.</p> <p>Continued confusion, specific to pediatric and geriatric age groups, may reflect drug interactions, hypoxia, anxiety, pain, electrolyte imbalances, or fear.</p> <p>May develop following trauma and indicate delirium, or may reflect “sundowner syndrome” in elderly patient. In patient who has used alcohol/drugs to excess, may suggest impending delirium tremens.</p> <p>Phase II recovery surgical patient must be able to care for self with the help of SO (if available) to prevent personal injury after discharge.</p>
<p>Collaborative</p> <p>Evaluate need for extended stay in postoperative recovery area or need for additional nursing care before discharge as appropriate.</p> <p>Contact/refer to case manager for alternative care options.</p>	<p>Disorientation may persist, and SO may not be able to protect patient at home.</p> <p>May not be ready/able to care for self, especially if no SO/family available to provide necessary assistance.</p>

NURSING DIAGNOSIS: Fluid Volume, risk for deficient

Risk factors may include

Restriction of oral intake (disease process/medical procedure/presence of nausea)
Loss of fluid through abnormal routes, e.g., indwelling tubes, drains; normal routes, e.g., vomiting
Loss of vascular integrity, changes in clotting ability
Extremes of age and weight

Possibly evidenced by

[Not applicable; presence of signs and symptoms establishes an *actual* diagnosis.]

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Hydration (NOC)

Demonstrate adequate fluid balance, as evidenced by stable vital signs, palpable pulses of good quality, normal skin turgor, moist mucous membranes, and individually appropriate urinary output.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Fluid Management (NIC)</p> <p>Independent</p> <p>Measure and record I&O (including tubes and drains). Calculate urine specific gravity as appropriate. Review intraoperative record for potential causes of imbalance.</p> <p>Assess urinary output specifically for type of operative procedure done.</p> <p>Provide voiding assistance measures as needed, e.g., privacy, sitting position, running water in sink, pouring warm water over perineum.</p> <p>Monitor vital signs noting changes in blood pressure, heart rate and rhythm, and respirations. Calculate pulse pressure.</p> <p>Note presence of nausea/vomiting.</p>	<p>Accurate documentation helps identify fluid losses/replacement needs and influences choice of interventions. <i>Note:</i> Ability to concentrate urine declines with age, increasing renal losses despite general fluid deficit.</p> <p>May be decreased or absent after procedures on the genitourinary system and/or adjacent structures (e.g., ureteroplasty, ureterolithotomy, abdominal or vaginal hysterectomy), indicating malfunction or obstruction of the urinary system.</p> <p>Promotes relaxation of perineal muscles and may facilitate voiding efforts.</p> <p>Hypotension, tachycardia, increased respirations may indicate fluid deficit, e.g., dehydration/hypovolemia. Although a drop in blood pressure is generally a late sign of fluid deficit (hemorrhagic loss), widening of the pulse pressure may occur early, followed by narrowing as bleeding continues and systolic BP begins to fall.</p> <p>Women, obese patients, and those prone to motion sickness have a higher risk of postoperative nausea/vomiting. In addition, the longer the duration of anesthesia, the greater the risk for nausea. <i>Note:</i> Nausea occurring during first 12–24 hr postoperatively is frequently related to anesthesia (including regional anesthesia). Nausea persisting more than 3 days postoperatively may be related to the choice of narcotic for pain control or other drug therapy.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Fluid Management (NIC)</p> <p>Independent</p> <p>Inspect dressings, drainage devices at regular intervals. Assess wound for swelling.</p> <p>Monitor skin temperature, palpate peripheral pulses.</p> <p>Collaborative</p> <p>Administer parenteral fluids, blood products (including autologous collection), and/or plasma expanders as indicated. Increase IV rate if needed.</p> <p>Insert/maintain urinary catheter with or without urimeter as indicated.</p> <p>Resume oral intake gradually, or begin enteral feeding as indicated.</p> <p>Administer medications as appropriate e.g.: Antiemetics;</p> <p> Epoetin alfa (Epogen), vitamins B₁₂/C, folic acid.</p> <p>Monitor laboratory studies, e.g., Hb/Hct, electrolytes. Compare preoperative and postoperative blood studies.</p>	<p>Excessive bleeding can lead to hypovolemia/circulatory collapse. Local swelling may indicate hematoma formation/hemorrhage. <i>Note:</i> Bleeding into a cavity (e.g., retroperitoneal) may be hidden and only diagnosed via vital sign depression, patient reports of pressure sensation in affected area.</p> <p>Cool/clammy skin, weak pulses indicate decreased peripheral circulation and need for additional fluid replacement.</p> <p>Replaces documented fluid loss. Timely replacement of circulating volume decreases potential for complications of deficit, e.g., electrolyte imbalance, dehydration, cardiovascular collapse. <i>Note:</i> Increased volume may be required initially to support circulating volume/prevent hypotension because of decreased vasomotor tone following Fluothane administration.</p> <p>Provides mechanism for accurate monitoring of urinary output.</p> <p>Following surgical procedures not involving the gastrointestinal (GI) tract, the small bowel may be capable of absorbing nutrients regardless of absence of bowel sounds reflecting GI motility. If no evidence of abdominal distension, mechanical obstruction, or GI bleeding, early enteral feeding can hasten resolution of postoperative ileus and reduce risk of infection. As ileus resolves, oral fluids can be started.</p> <p>Relieves nausea/vomiting, which may impair intake and add to fluid losses. <i>Note:</i> Naloxone (Narcan) may relieve nausea related to use of anesthetic agents, e.g., morphine (Duramorph), fentanyl citrate (Sublimaze).</p> <p>Medications used to stimulate production of RBCs is begun preoperatively and may be administered postoperatively as well.</p> <p>Indicators of hydration/circulating volume. Preoperative anemia and/or low Hct combined with unreplaced fluid losses intraoperatively will further potentiate deficit.</p>

NURSING DIAGNOSIS: Pain, acute

May be related to

Disruption of skin, tissue, and muscle integrity; musculoskeletal/bone trauma
Presence of tubes and drains

Possibly evidenced by

Reports of pain
Alteration in muscle tone; facial mask of pain
Distraction/guarding/protective behaviors
Self-focusing; narrowed focus
Autonomic responses

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Pain Level (NOC)

Report pain relieved/controlled.
Appear relaxed, able to rest/sleep and participate in activities appropriately.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Pain Management (NIC)</p> <p>Independent</p> <p>Note patient's age, weight, coexisting medical/psychological conditions, idiosyncratic sensitivity to analgesics, and intraoperative course (e.g., size/location of incision, drain placement, anesthetic agents used).</p> <p>Review intraoperative/recovery room record for type of anesthesia and medications previously administered.</p> <p>Evaluate pain regularly (e.g., every 2 hr x 12) noting characteristics, location, and intensity (0–10 scale). Emphasize patient's responsibility for reporting pain/relief of pain completely.</p> <p>Note presence of anxiety/fear, and relate with nature of and preparation for procedure.</p> <p>Assess vital signs, noting tachycardia, hypertension, and increased respiration, even if patient denies pain.</p>	<p>Approach to postoperative pain management is based on multiple variable factors. <i>Note:</i> Administration of the anticonvulsant lamotrigine (Lamictal) before spinal anesthesia reduces analgesic use and lowers pain-scale ratings in the postoperative patient.</p> <p>Presence of narcotics and droperidol in system potentiates narcotic analgesia, whereas inhalation anesthetics have no analgesic effects. In addition, intraoperative local/regional blocks have varying duration, e.g., 1–2 hr for regionals or up to 2–6 hr for locals.</p> <p>Provides information about need for/effectiveness of interventions. <i>Note:</i> It may not always be possible to eliminate pain; however, analgesics should reduce pain to a tolerable level. A frontal and/or occipital headache may develop 24–72 hr following spinal anesthesia, necessitating recumbent position, increased fluid intake, and notification of the anesthesiologist for alternative pain management plan.</p> <p>Concern about the unknown (e.g., outcome of a biopsy) and/or inadequate preparation (e.g., emergency appendectomy) can heighten patient's perception of pain.</p> <p>Changes in these vital signs often indicate acute pain and discomfort. <i>Note:</i> Some patients may have a slightly lowered BP, which returns to normal range after pain relief is achieved.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Pain Management (NIC)</p> <p>Independent</p> <p>Assess causes of possible discomfort other than operative procedure.</p> <p>Provide information about transitory nature of discomfort, as appropriate.</p> <p>Reposition as indicated, e.g., semi-Fowler's, lateral Sims'.</p> <p>Provide additional comfort measures, e.g., back rub, heat/cold applications.</p> <p>Encourage use of relaxation techniques, e.g., deep-breathing exercises, guided imagery, visualization, music.</p> <p>Provide regular oral care, occasional ice chips/sips of fluids as tolerated.</p> <p>Document effectiveness and side/adverse effects of analgesia.</p>	<p>Discomfort can be caused/aggravated by presence of nonpatent indwelling catheters, NG tube, parenteral lines (bladder pain, gastric fluid and gas accumulation, and infiltration of IV fluids/medications).</p> <p>Understanding the cause of the discomfort (e.g., sore muscles from administration of muscle relaxants may persist up to 48 hr postoperatively; sinus headache associated with nitrous oxide and sore throat due to intubation are transitory) provides emotional reassurance. <i>Note:</i> Paresthesia of body parts suggest nerve injury. Symptoms may last hours or months and require additional evaluation.</p> <p>May relieve pain and enhance circulation. Semi-Fowler's position relieves abdominal muscle tension and arthritic back muscle tension, whereas lateral Sims' relieves dorsal pressures.</p> <p>Improves circulation, reduces muscle tension and anxiety associated with pain. Enhances sense of well-being.</p> <p>Relieves muscle and emotional tension; enhances sense of control and may improve coping abilities.</p> <p>Reduces discomfort associated with dry mucous membranes due to anesthetic agents, oral restrictions.</p> <p>Respirations may decrease on administration of narcotic, and synergistic effects with anesthetic agents may occur. <i>Note:</i> Migration of epidural analgesia toward head (cephalad diffusion) may cause respiratory depression or excessive sedation.</p>
<p>Collaborative</p> <p>Administer medications as indicated: Analgesics IV (after reviewing anesthesia record for contraindications and/or presence of agents that may potentiate analgesia); provide around-the-clock analgesia with intermittent rescue doses;</p>	<p>Analgesics given IV reach the pain centers immediately, providing more effective relief with small doses of medication. IM administration takes longer, and its effectiveness depends on absorption rates and circulation. <i>Note:</i> Narcotic dosage should be reduced by one-fourth to one-third after use of fentanyl (Innovar) or droperidol (Inapsine) to prevent profound tranquilization during first 10 hr postoperatively. Current research supports need to administer analgesics around the clock initially to prevent rather than merely treat pain.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Pain Management (NIC)</p> <p>Collaborative</p> <p>Patient-controlled analgesia (PCA) or epidural analgesia (PCEA);</p> <p>Local anesthetics, e.g., epidural block/infusion;</p> <p>Nonsteroidal anti-inflammatory drugs (NSAIDs), e.g., aspirin, diflunisal (Dolobid), naproxen (Anaprox).</p> <p>Monitor use/effectiveness of transcutaneous electrical nerve stimulation (TENS).</p>	<p>Use of PCA/PCEA necessitates detailed patient instruction. It must be monitored closely but is considered very effective in managing acute postoperative pain with smaller amounts of narcotic and increased patient satisfaction.</p> <p>Analgesics may be injected into the operative site, or nerves to the site may be kept blocked in the immediate postoperative phase to prevent severe pain. <i>Note:</i> Continuous epidural infusions may be used for 1–5 days following procedures that are known to cause severe pain (e.g., certain types of thoracic or abdominal surgery).</p> <p>Useful for mild to moderate pain or as adjuncts to opioid therapy when pain is moderate to severe. Allows for a lower dosage of narcotics, reducing potential for side effects. Use alternating schedule with NSAIDs administered between opioid doses so peak effect occurs at a different time. <i>Note:</i> May be contraindicated because of effects on coagulation.</p> <p>TENS may be useful in reducing pain and amount of medication required postoperatively.</p>

<p>NURSING DIAGNOSIS: Skin/Tissue Integrity, impaired</p> <p>May be related to</p> <p>Mechanical interruption of skin/tissues Altered circulation, effects of medication; accumulation of drainage; altered metabolic state</p> <p>Possibly evidenced by</p> <p>Disruption of skin surface/layers and tissues</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Wound Healing: Primary Intention (NOC) Achieve timely wound healing.</p> <p>Knowledge: Treatment Regimen (NOC) Demonstrate behaviors/techniques to promote healing and to prevent complications.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Incision Site Care (NIC)</p> <p>Independent</p> <p>Reinforce initial dressing/change as indicated. Use strict aseptic techniques.</p> <p>Gently remove tape (in direction of hair growth) and dressings when changing.</p> <p>Apply skin sealants/barriers before tape if needed. Use paper/silk (hypoallergenic) tape or Montgomery straps/elastic netting for dressings requiring frequent changing.</p> <p>Check tension of dressings. Apply tape at center of incision to outer margin of dressing. Avoid wrapping tape around extremity.</p> <p>Inspect wound regularly, noting characteristics and integrity. Note patients at risk for delayed healing, e.g., presence of chronic obstructive pulmonary disease(COPD), anemia, obesity/malnutrition, DM, hematoma formation, vomiting, ETOH (alcohol) withdrawal; use of steroid therapy; advanced age.</p> <p>Assess amounts and characteristics of drainage.</p> <p>Maintain patency of drainage tubes; apply collection bag over drains/incisions in presence of copious or caustic drainage.</p> <p>Elevate operative area as appropriate.</p> <p>Splint abdominal and chest incisions/area with pillow or pad during coughing/movement.</p> <p>Caution patient not to touch wound.</p> <p>Cleanse skin surface (if needed) with diluted hydrogen peroxide solution, or running water and mild soap after incision is sealed.</p>	<p>Protects wound from mechanical injury and contamination. Prevents accumulation of fluids that may cause excoriation. <i>Note:</i> Studies suggest clean techniques may be sufficient, but additional research is required before protocols are revised.</p> <p>Reduces risk of skin trauma and disruption of wound.</p> <p>Reduces potential for skin trauma/abrasions and provides additional protection for delicate skin/tissues.</p> <p>Can impair/occlude circulation to wound and to distal portion of extremity.</p> <p>Early recognition of delayed healing/developing complications may prevent a more serious situation. Wounds may heal more slowly in patients with comorbidity, or the elderly in whom reduced cardiac output decreases capillary blood flow.</p> <p>Decreasing drainage suggests evolution of healing process, whereas continued drainage or presence of bloody/odoriferous exudate suggests complications (e.g., fistula formation, hemorrhage, infection).</p> <p>Facilitates approximation of wound edges; reduces risk of infection and chemical injury to skin/tissues.</p> <p>Promotes venous return and limits edema formation. <i>Note:</i> Elevation in presence of venous insufficiency may be detrimental.</p> <p>Equalizes pressure on the wound, minimizing risk of dehiscence/rupture. Especially important during stage I healing (first 3–4 days) and for incisions closed with adhesives.</p> <p>Prevents contamination of wound.</p> <p>Reduces skin contaminants; aids in removal of drainage/exudate.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Incision Site Care (NIC)</p> <p>Independent</p> <p>Monitor blood glucose levels of diabetic patients as indicated.</p> <p>Collaborative</p> <p>Apply ice if appropriate.</p> <p>Use abdominal binder if indicated.</p> <p>Irrigate wound; assist with debridement as needed.</p> <p>Monitor/maintain dressings, e.g., hydrogel, vacuum dressing.</p>	<p>These patients are at higher risk for nosocomial infections and delayed healing, and the risk increases if their glucose level exceeds 220 mg/dL on the first postoperative day.</p> <p>Reduces edema formation that may cause undue pressure on incision during initial postoperative period.</p> <p>Provides additional support for high-risk incisions (e.g., obese patient).</p> <p>Removes infectious exudate/necrotic tissue to promote healing.</p> <p>May be used to hasten healing in large, draining wound/fistula, to increase patient comfort, and to reduce frequency of dressing changes. Also allows drainage to be measured more accurately and analyzed for pH and electrolyte content as appropriate.</p>

<p>NURSING DIAGNOSIS: Tissue Perfusion, risk for ineffective</p> <p>Risk factors may include</p> <p>Interruption of flow: arterial, venous Hypovolemia</p> <p>Possibly evidenced by</p> <p>[Not applicable; presence of signs and symptoms establishes an <i>actual</i> diagnosis.]</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Circulation Status (NOC)</p> <p>Demonstrate adequate perfusion evidenced by stable vital signs, peripheral pulses present and strong; skin warm/dry; usual mentation and individually appropriate urinary output.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Hypovolemia Management (NIC)</p> <p>Independent</p> <p>Change position slowly initially.</p> <p>Monitor vital signs; palpate peripheral pulses; note skin temperature/color and capillary refill. Evaluate urinary output/time of voiding. Document dysrhythmias.</p> <p>Investigate changes in mentation/failure to achieve usual mental state.</p>	<p>Vasoconstrictor mechanisms are depressed, and quick movement may lead to orthostatic hypotension, especially in the early postoperative period.</p> <p>Indicators of adequacy of circulating volume and tissue perfusion/organ function. Effects of medications/electrolyte imbalances may create dysrhythmias, impairing cardiac output and tissue perfusion.</p> <p>May reflect a number of problems such as inadequate clearance of anesthetic agent, oversedation (pain medication), hypoventilation, hypovolemia, or intraoperative complications (e.g., emboli).</p>
<p>Emboli Precautions (NIC)</p> <p>Assist with range-of-motion (ROM) exercises, including active ankle/leg exercises.</p> <p>Encourage/assist with early ambulation.</p> <p>Avoid use of knee gatch/pillow under knees. Caution patient against crossing legs or sitting with legs dependent for prolonged period.</p> <p>Assess lower extremities for erythema, edema, calf tenderness (positive Homans' sign).</p>	<p>Stimulates peripheral circulation; aids in preventing venous stasis to reduce risk of thrombus formation.</p> <p>Enhances circulation and return of normal organ function.</p> <p>Prevents stasis of venous circulation and reduces risk of thrombophlebitis.</p> <p>Circulation may be restricted by some positions used during surgery, and anesthetics and decreased activity alter vasomotor tone, potentiating vascular pooling and increasing risks of thrombus formation.</p>
<p>Collaborative</p> <p>Apply antiembolic hose as indicated.</p> <p>Hypovolemia Management (NIC)</p> <p>Administer IV fluids/blood products as needed.</p>	<p>Promotes venous return and prevents venous stasis of legs to reduce risk of thrombosis.</p> <p>Maintains circulating volume; supports perfusion.</p>

NURSING DIAGNOSIS: Knowledge, deficient [Learning Need] regarding condition/situation, prognosis, treatment, self-care, and discharge needs

May be related to

Lack of exposure/lack of recall, information misinterpretation
Unfamiliarity with information resources
Cognitive limitation

Possibly evidenced by

Questions/request for information; statement of misconception
Inaccurate follow-through of instructions, development of preventable complications

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Knowledge: Disease Process (NOC)

Verbalize understanding of condition, effects of procedure, and potential complications.

Knowledge: Treatment Regimen (NOC)

Verbalize understanding of therapeutic needs.
Correctly perform necessary procedures and explain reasons for actions.
Initiate necessary lifestyle changes and participate in treatment regimen.

ACTIONS/INTERVENTIONS	RATIONALE
Treatment: Disease Process (NIC)	
Independent	
Review specific surgery performed/procedure done and future expectations.	Provides knowledge base from which patient can make informed choices.
Review and have patient/SO demonstrate dressing/wound/ tube care when indicated. Identify source for supplies.	Promotes competent self-care and enhances independence. <i>Note:</i> For incisions closed with a surgical zipper, patient should be instructed as to when it is appropriate to peel off the device.
Stress avoidance of environmental risk factors, e.g., exposure to crowds/persons with infections.	Reduces potential for acquired infections.
Discuss drug therapy, including use of prescribed and OTC analgesics.	Enhances cooperation with regimen; reduces risk of adverse reactions/untoward effects.
Identify specific activity limitations.	Prevents undue strain on operative site.
Recommend planned/progressive exercise.	Promotes return of normal function and enhances feelings of general well-being.
Schedule adequate rest periods.	Prevents fatigue and conserves energy for healing.
Review importance of nutritious diet and adequate fluid intake.	Provides elements necessary for tissue regeneration/healing and support of tissue perfusion and organ function.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Treatment: Disease Process (NIC)</p> <p>Independent</p> <p>Encourage continued cessation of smoking.</p> <p>Identify signs/symptoms requiring medical evaluation, e.g., nausea/vomiting; difficulty voiding; fever, continued/odoriferous wound drainage; incisional swelling, erythema, or separation of edges; unresolved or changes in characteristics of pain.</p> <p>Stress necessity of follow-up visits with providers, including therapists, laboratory.</p> <p>Include SO in teaching program/discharge planning. Provide written instructions/teaching materials. Instruct in use of and arrange for special equipment.</p> <p>Identify available resources, e.g., home care services, visiting nurse, Meals on Wheels, outpatient therapy, contact phone number for questions.</p>	<p>Smoking increases risk of pulmonary infections, causes vasoconstriction, and reduces oxygen-binding capacity of blood, affecting cellular perfusion and potentially impairing healing.</p> <p>Early recognition and treatment of developing complications (e.g., ileus, urinary retention, infection, delayed healing) may prevent progression to more serious or life-threatening situation.</p> <p>Monitors progress of healing and evaluates effectiveness of regimen.</p> <p>Provides additional resources for reference after discharge. Promotes effective self-care.</p> <p>Enhances support for patient during recovery period, and provides additional evaluation of ongoing needs/new concerns.</p>

POTENTIAL CONSIDERATIONS following surgical procedure (dependent on patient's age, physical condition/presence of complications, personal resources, and life responsibilities)

Fatigue—increased energy requirements to perform activities of daily living, states of discomfort.

Infection, risk for—broken skin, traumatized tissues, stasis of body fluids; presence of pathogens/contaminants, environmental exposure, invasive procedures.

Self-Care deficit/Home Maintenance, ineffective—decreased strength/endurance, pain/discomfort, unfamiliarity with neighborhood resources, inadequate support systems.

Refer also to appropriate plans of care regarding underlying condition/specific surgical procedure for additional considerations.