Decreased Cardiac Output
Dec Deficient Fluid Volume
Decreased Intracranial Adaptive Capacity
Deficient Knowledge
Disturbed Body Image
Disturbed Sleep Pattern
Excess Fluid Volume
Hyperthermia
Hypothermia
Imbalanced Nutrition: Less Than Body Requirements
Impaired Gas Exchange
Impaired Spontaneous Ventilation
Impaired Swallowing
Impaired Verbal Communication
Ineffective Airway Clearance
Ineffective Breathing Pattern
Ineffective Cardiopulmonary Tissue Perfusion
Ineffective Coping
Ineffective Gastrointestinal Tissue Perfusion
Ineffective Peripheral Tissue Perfusion
Ineffective Renal Tissue Perfusion
Powerlessness
Risk for Aspiration
Risk for Infection
Situational Low Self-Esteem
Unilateral Neglect

Nursing Management Plan

Decreased Cardiac Output

**Definition:** Inadequate blood pumped by the heart to meet the metabolic demands of the body.

Decreased Cardiac Output Related to Alterations in Preload

**Defining Characteristics**

- Cardiac output <4.0 L/min
- Cardiac index <2.5 L/min/m²
- Heart rate >100 beats/min
- Urine output <30 ml/hr or 0.5 ml/kg/hr
- Decreased mentation, restlessness, agitation, confusion
- Diminished peripheral pulses
- Blue, gray, or dark purple tint to tongue and sublingual area
- Systolic blood pressure <90 mm Hg
- Subjective complaints of fatigue

**Reduced Preload:**

- Right atrial pressure <2 mm Hg
- Pulmonary artery occlusion pressure <5 mm Hg

**Excessive Preload:**

- Right atrial pressure >6 mm Hg
- Pulmonary artery occlusion pressure >12 mm Hg

**Outcome Criteria**

- Cardiac output 4–8 L/min
• Cardiac index 2.5–4 L/min/m²
• Right atrial pressure 2–8 mm Hg
• Pulmonary artery occlusion pressure 5–12 mm Hg

Nursing Interventions and Rationale

1. Collaborate with physician regarding the administration of oxygen to maintain an Spo₂ >92% to prevent tissue hypoxia.

2. Maintain surveillance for signs of decreased tissue perfusion and acidosis to facilitate the early identification and treatment of complications.


For Reduced Preload Secondary to Volume Loss:

1. Collaborate with physician regarding the administration of crystalloids, colloids, blood, and blood products to increase circulating volume.

2. Limit blood sampling, observe intravenous lines for accidental disconnection, apply direct pressure to bleeding sites, and maintain normal body temperature to minimize fluid loss.

3. Position patient with legs elevated, trunk flat, and head and shoulders above the chest to enhance venous return.

4. Encourage oral fluids (as appropriate), administer free water with tube feedings, and replace fluids that are lost through wound or tube drainage to promote adequate fluid intake.

5. Maintain surveillance for signs of fluid volume excess and adverse effects of blood and blood product administration to facilitate the early identification and treatment of complications.
For Reduced Preload Secondary to Venous Dilation:

1. Collaborate with physician regarding the administration of vasoconstrictors to increase venous return.

2. Maintain surveillance for adverse effects of vasoconstrictor therapy to facilitate the early identification and treatment of complications.

3. If patient is hyperthermic, administer tepid bath, hypothermia blanket, and/or ice bags to axilla and groin to decrease temperature and promote vasoconstriction.

For Excessive Preload Secondary to Volume Overload:

1. Collaborate with physician regarding the administration of the following:
   - Diuretics to remove excessive fluid.
   - Vasodilators to decrease venous return.
   - Inotropes to increase myocardial contractility.

2. Restrict fluid intake and double concentrate intravenous drips to minimize fluid intake.

3. Position patient in semi-Fowler’s or high-Fowler’s position to reduce venous return.

4. Maintain surveillance for signs of fluid volume deficit and adverse effects of diuretic, vasodilator, and inotropic therapies to facilitate the early identification and treatment of complications.

For Excessive Preload Secondary to Venous Constriction:

1. Collaborate with physician regarding the administration of vasodilators to promote venous dilation.

2. Maintain surveillance for adverse effects of vasodilator therapy to facilitate the early identification and treatment of complications.

3. If patient is hypothermic, wrap patient in warm blankets or administer hyperthermia blanket to increase temperature and promote vasodilation.

Decreased Cardiac Output Related to Alterations in Afterload
Defining Characteristics

• Cardiac output <4 L/min
• Cardiac index <2.5 L/min/m2
• Heart rate >100 beats/min
• Urine output <30 ml/hr
• Decreased mentation, restlessness, agitation, confusion
• Diminished peripheral pulses
• Blue, gray, or dark purple tint to tongue and sublingual area
• Systolic blood pressure <90 mm Hg
• Subjective complaints of fatigue

Reduced Afterload:

• Pulmonary vascular resistance <100 dynes/sec/cm-5
• Systemic vascular resistance <800 dynes/sec/cm-5

Excessive Afterload:

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• Pulmonary vascular resistance >250 dynes/sec/cm-5
• Systemic vascular resistance >1200 dynes/sec/cm-5

Outcome Criteria

• Cardiac output 4–8 L/min
• Cardiac index 2.5–4 L/min/m2
• Pulmonary vascular resistance 80–250 dynes/sec/cm-5
• Systemic vascular resistance 800–1200 dynes/sec/cm-5

Nursing Interventions and Rationale

1. Collaborate with physician regarding the administration of oxygen to maintain an Spo2 >92% to prevent tissue hypoxia.
2. Maintain surveillance for signs of decreased tissue perfusion and acidosis to facilitate the early identification and treatment of complications.

For Reduced Afterload:

1. Collaborate with physician regarding the administration of vasoconstrictors to promote arterial vasoconstriction and prevent relative hypovolemia. If decreased preload is present, implement nursing management plan of care, Decreased Cardiac Output Related to Alterations in Preload.

2. Maintain surveillance for adverse effects of vasoconstrictor therapy to facilitate the early identification and treatment of complications.

3. If patient is hyperthermic, administer tepid bath, hypothermia blanket, and/or ice bags to axilla and groin to decrease temperature and promote vasoconstriction.

For Excessive Afterload:

1. Collaborate with physician regarding the administration of vasodilators to promote arterial vasodilation.

2. Collaborate with physician regarding initiation of intraaortic balloon pump to facilitate afterload reduction.

3. Promote rest and relaxation and decrease environmental stimulation to minimize sympathetic stimulation.

4. Maintain surveillance for adverse effects of vasodilator therapy to facilitate the early identification and treatment of complications.

5. If patient is hypothermic, wrap patient in warm blankets or administer hyperthermia blanket to increase temperature and promote vasodilation.

6. If patient is in pain, treat pain to reduce sympathetic stimulation. Implement nursing management plan of care, Acute Pain Related to Transmission and Perception of
Cutaneous, Visceral, Muscular, or Ischemic Impulses.

Decreased Cardiac Output Related to Alterations in Contractility

*Defining Characteristics*

- Cardiac output <4 L/min
- Cardiac index <2.5 L/min/m²
- Heart rate >100 beats/min
- Urine output <30 ml/hr
- Decreased mentation, restlessness, agitation, confusion
- Diminished peripheral pulses
- Blue, gray, or dark purple tint to tongue and sublingual area
- Systolic blood pressure <90 mm Hg
- Subjective complaints of fatigue
- Right ventricular stroke work index <7 g/m²/beat
- Left ventricular stroke work index <35 g/m²/beat

*Outcome Criteria*

- Cardiac output 4–8 L/min
- Cardiac index 2.5–4 L/min/m²
- Right ventricular stroke work index 7–12 g/m²/beat
- Left ventricular stroke work index 35–85 g/m²/beat

*Nursing Interventions and Rationale*

1. Collaborate with physician regarding the administration of oxygen to maintain an Spo₂ >92% to *prevent tissue hypoxia.*

2. Maintain surveillance for signs of decreased tissue perfusion and acidosis to *facilitate the early identification and treatment of complications.*

3. Ensure preload is optimized. If preload is reduced or excessive, implement nursing
management plan of care, Decreased Cardiac Output Related to Alterations in Preload.

4. Ensure afterload is optimized. If afterload is reduced or excessive, implement nursing management plan of care, Decreased Cardiac Output Related to Alterations in Afterload.

5. Ensure electrolytes are optimized. Collaborate with physician regarding the administration of electrolyte replacement therapy to enhance cellular ionic environment.

6. Collaborate with physician regarding the administration of inotropes to enhance myocardial contractility.

7. If myocardial ischemia present, implement nursing management plan of care, Altered Cardiopulmonary Tissue Perfusion.

Decreased Cardiac Output Related to Alterations in Heart Rate or Rhythm

Defining Characteristics

- Cardiac output <4 L/min
- Cardiac index <2.5 L/min/m2
- Heart rate >100 beats/min
- Urine output <30 ml/hr or 0.5 ml/kg/hr
- Decreased mentation, restlessness, agitation, confusion
- Diminished peripheral pulses
- Blue, gray, or dark purple tint to tongue and sublingual area
- Systolic blood pressure <90 mm Hg
- Subjective complaints of fatigue
- Heart rate <60 beats/min
- Dysrhythmias
Outcome Criteria

- Cardiac output 4–8 L/min
- Cardiac index 2.5–4 L/min/m²
- Absence of dysrhythmias or return to baseline
- Heart rate >60 beats/min

Nursing Interventions and Rationale

1. Collaborate with physician regarding the administration of oxygen to maintain an SpO₂ >92% to prevent tissue hypoxia.

2. Ensure electrolytes are optimized. Collaborate with physician regarding the administration of electrolyte therapy to enhance cellular ionic environment and avoid precipitation of dysrhythmias.

3. Collaborate with physician and pharmacist regarding patient’s current medications and their effect on heart rate and rhythm to identify any prodysrhythmic or bradycardic side effects.

4. Maintain surveillance for signs of decreased tissue perfusion and acidosis to facilitate the early identification and treatment of complications.

5. Monitor ST segment continuously to determine changes in myocardial tissue perfusion. If myocardial ischemia is present, implement nursing management plan of care, Altered Cardiopulmonary Tissue Perfusion.

For Lethal Dysrhythmias or Asystole

1. Initiate Advanced Cardiac Life Support interventions and notify physician immediately.

For Nonlethal Dysrhythmias

1. Collaborate with physician regarding administration of antidysrhythmic therapy, synchronized cardioversion, and/or overdrive pacing to control dysrhythmias.
2. Maintain surveillance for adverse effects of antidysrhythmic therapy to facilitate the early identification and treatment of complications.

For Heart Rate <60 Beats/Min

1. Collaborate with physician regarding the initiation of temporary pacing to increase heart rate.

Decreased Cardiac Output Related to Sympathetic Blockade

*Defining Characteristics*

- Decreased cardiac output (CO) and cardiac index (CI)
- Systolic blood pressure (SBP) <90 mm Hg or below patient's baseline
- Decreased right atrial pressure (RAP) and pulmonary artery occlusion pressure (PAOP)
- Decreased systemic vascular resistance (SVR)
- Bradycardia
- Cardiac dysrhythmias

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- Postural hypotension

*Outcome Criteria*

- CO and CI are within normal limits.
- SBP is >90 mm Hg or returns to baseline.
- RAP and PAOP are within normal limits.
- SVR is within normal limits.
- Sinus rhythm is present.
- Dysrhythmias are absent.
- Fainting or dizziness with position change is absent.

*Nursing Interventions and Rationale*

1. Implement measures to prevent episodes of postural hypertension:
• Change patient's position slowly to allow the cardiovascular system time to compensate.
• Apply antiembolic stockings to promote venous return.
• Perform range of motion exercises every 2 hours to prevent venous pooling.
• Collaborate with the physician and physical therapist regarding the use of a tilt table to progress the patient from supine to upright position.

2. Collaborate with the physician regarding the administration of the following:
• Crystalloids and/or colloids to increase the patient's circulating volume, which increases stroke volume and subsequently cardiac output.
• Vasopressors if fluids are ineffective to constrict the patient's vascular system, which increases resistance and subsequently blood pressure.

3. Monitor cardiac rhythm for bradycardia and/or dysrhythmias, which can further decrease cardiac output.

4. Avoid any activity that can stimulate the vagal response because bradycardia can result.

5. Treat symptomatic bradycardia and symptomatic dysrhythmias according to unit's emergency protocol or Advanced Cardiac Life Support (ACLS) guidelines.

Nursing Management Plan

Decreased Intracranial Adaptive Capacity

Definition: Intracranial fluid dynamic mechanisms that normally compensate for increases in intracranial volumes are compromised, resulting in repeated disproportionate increases in intracranial pressure (ICP) in response to a variety of noxious and non-noxious stimuli.

Decreased Intracranial Adaptive Capacity Related to Failure of Normal Intracranial Compensatory Mechanisms

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Defining Characteristics

• ICP >15 mm Hg, sustained for 15–30 minutes

• Headache

• Vomiting, with or without nausea

• Seizures

• Decrease in Glasgow Coma Scale score of 2 or more points from baseline

• Alteration in level of consciousness, ranging from restlessness to coma

• Change in orientation: disoriented to time and/or place and/or person

• Difficulty or inability to follow simple commands

• Increasing systolic blood pressure of more than 20 mm Hg with widening pulse pressure

• Bradycardia

• Irregular respiratory pattern (e.g., Cheyne-Stokes, central neurogenic hyperventilation, ataxic, apneustic)

• Change in response to painful stimuli (e.g., purposeful to inappropriate or absent response)

• Signs of impending brain herniation:

  Hemiparesis or hemiplegia

  Hemisensory changes

  Unequal pupil size (1 mm or more difference)

  Failure of pupil to react to light

  Dysconjugate gaze and inability to move one eye beyond midline if third, fourth, or sixth cranial nerves involved

  Loss of oculocephalic or oculovestibular reflexes

  Possible decorticate or decerebrate posturing
**Outcome Criteria**

- ICP is ≤15 mm Hg.
- Cerebral perfusion pressure (CPP) is >60 mm Hg.
- Clinical signs of increased ICP as previously described are absent.

**Nursing Interventions and Rationale**

1. Maintain adequate CPP.
   a. Collaborate with physician regarding the administration of volume expanders, vasopressors, or antihypertensives to maintain the patient’s blood pressure within normal range.
   b. Implement measures to reduce ICP.
      - Elevate head of bed 30 to 45 degrees to facilitate venous return.
      - Maintain head and neck in neutral plan (avoid flexion, extension, or lateral rotation) to enhance venous drainage from the head.
      - Avoid extreme hip flexion.
      - Collaborate with the physician regarding the administration of steroids, osmotic agents, and diuretics and need for drainage of cerebrospinal fluid (CSF) if a ventriculostomy is in place.
      - Assist patient to turn and move self in bed (instruct patient to exhale while turning or pushing up in bed) to avoid isometric contractions and Valsalva maneuver.

2. Maintain patent airway and adequate ventilation and supply oxygen to prevent hypoxemia and hypercarbia.

3. Monitor arterial blood gas (ABG) values and maintain Pao2 >80 mm Hg, Paco2 at 25–35 mm Hg, and pH at 7.35–7.45 to prevent cerebral vasodilation.
4. Avoid suctioning beyond 10 seconds at a time; hyperoxygenate and hyperventilate before and after suctioning.

5. Plan patient care activities and nursing interventions around patient's ICP response. Avoid unnecessary additional disturbances, and allow patient up to 1 hour of rest between activities as frequently as possible. Studies have shown the direct correlation between nursing care activities and increases in ICP.

6. Maintain normothermia with external cooling or heating measures as necessary. Wrap hands, feet, and male genitalia in soft towels before cooling measures to prevent shivering and frostbite.

7. With physician's collaboration, control seizures with prophylactic and as-necessary (PRN) anticonvulsants. Seizures can greatly increase the cerebral metabolic rate.

8. Collaborate with the physician regarding the administration of sedatives, barbiturates, or paralyzing agents to reduce cerebral metabolic rate.

9. Counsel family members to maintain calm atmosphere and avoid disturbing topics of conversation (e.g., patient condition, pain, prognosis, family crisis, financial difficulties).

10. If signs of impending brain herniation are present, implement the following:
   a. Notify the physician at once.
   b. Be sure head of bed is elevated 45 degrees and patient's head is in neutral plane.
   c. Administer mainline intravenous (IV) infusion slowly to keep-open rate.
   d. Drain CSF as ordered if a ventriculostomy is in place.
   e. Prepare to administer osmotic agents and/or diuretics.
   f. Prepare patient for emergency computed tomography (CT) head scan and/or emergency surgery.

Nursing Management Plan
**Deficient Fluid Volume**

**Definition:** Decreased intravascular, interstitial, and/or intracellular fluid. This refers to dehydration, water loss alone without change in sodium.

Deficient Fluid Volume Related to Absolute Loss

*Defining Characteristics*

- Cardiac output (CO) < 4 L/min
- Cardiac index (CI) < 2.2 L/min
- Pulmonary artery occlusion pressure (PAOP), pulmonary artery diastolic (PAD) pressure less than normal or less than baseline, central venous pressure (CVP) less than normal or less than baseline (PAOP < 6 mm Hg)
- Tachycardia
- Narrowed pulse pressure
- Systolic blood pressure (SBP) < 100 mm Hg
- Urinary output < 30 ml/hr
- Pale, cool, moist skin
- Apprehensiveness

**Outcome Criteria**

- CO is > 4 L/min, and CI is > 2.2 L/min.
- PAOP, PAD, and CVP are normal or back to baseline level.
- Pulse is normal or back to baseline.
- SBP is > 90.
- Urinary output is > 30 ml/hr.

**Nursing Interventions and Rationale**

1. Secure airway, and administer high-flow oxygen.
2. Place patient in supine position with legs elevated to increase preload. For patient with head injury, consider using low-Fowler's position with legs elevated.

3. For fluid repletion, use the 3:1 rule, replacing three parts of fluid for every unit of blood lost.

4. Administer crystalloid solutions using the fluid challenge technique: infuse precise aliquots of fluid (usually 5 to 20 ml/min) over 10–minute periods; monitor cardiac loading pressure serially to determine successful challenging. If the pulmonary PAOP or PAD elevates more than 7 mm Hg above beginning level, the infusion should be stopped. If the PAOP or PAD rises only to 3 mm Hg above baseline or falls, another fluid challenge should be administered.

5. Replete fluids first before considering use of vasopressors, since vasopressors increase myocardial oxygen consumption out of proportion to the reestablishment of coronary perfusion in the early phases of treatment.

6. When blood replacement is indicated, replace it with fresh packed red cells and fresh frozen plasma to keep clotting factors intact.

7. Move or reposition patient minimally to decrease or limit tissue oxygen demands.

8. Evaluate patient’s anxiety level, and intervene through patient education or sedation to decrease tissue oxygen demands.


Deficient Fluid Volume Related to Decreased Secretion of Antidiuretic Hormone (ADH)

Defining Characteristics

- Confusion and lethargy
- Decreased skin turgor
• Thirst
• Weight loss over short period
• Decreased PAOP
• Decreased CVP
• Urinary output >6 L/day
• Serum sodium >148 mEq/L
• Serum osmolality >295 mOsm/kg
• Urine osmolality <100 mOsm/kg
• Urine specific gravity <1.005

Outcome Criteria
• Weight returns to baseline.
• Urinary output is >30 ml/hr and <200 ml/hr.
• Serum osmolality is 280–295 mOsm/kg.
• Urine specific gravity is 1.010–1.030.

Nursing Interventions and Rationale
1. Record intake and output every hour, noting color and clarity of urine because color and clarity are an indication of urine concentration.
2. Monitor ECG rhythm continuously for dysrhythmias caused by electrolyte imbalance.
3. Collaborate with physician regarding administration of vasopressin or desmopressin to replace ADH.
   a. Monitor patient for adverse effects of medications (i.e., headache, chest pain, abdominal pain) caused by vasoconstriction.
   b. Report adverse effects to physician immediately.
4. Collaborate with physician regarding intravenous fluid and electrolyte replacement
therapy to restore fluid balance, correct dehydration, and maintain electrolyte balance.

a. Administer hypotonic saline to replace free water deficit.

5. Provide oral fluids low in sodium such as water, coffee, tea, or orange juice to decrease sodium intake.

6. Weigh patient daily (at same time, in same amount of clothing, and preferably with same scale) to ensure accuracy of readings.

7. Reposition patient every 2 hours to prevent skin integrity issues caused by dehydration.

8. Provide mouth care every 4 hours to prevent breakdown of oral mucous membranes.

9. Collaborate with physician regarding administration of medications to prevent constipation caused by dehydration.

10. Maintain surveillance for symptoms of hypernatremia (muscle twitching, irritability, seizures), hypovolemic shock (hypotension, tachycardia, decreased CVP and PAOP), and deep vein thrombosis (calf pain, tenderness, swelling).

Deficient Fluid Volume Related to Relative Loss

Defining Characteristics

• PAOP, PAD pressure, CVP less than normal or less than baseline

• Tachycardia

• Narrowed pulse pressure

• SBP <100 mm Hg

• Urinary output <30 ml/hr

• Increased hematocrit level

Outcome Criteria
• PAOP, PAD, and CVP are normal or back to baseline.
• SBP is >90 mm Hg.
• Urinary output is >30 ml/hr.
• Hematocrit level is normal.

*Nursing Interventions and Rationale*

1. Collaborate with the physician regarding the administration of intravenous (IV) fluid replacements (usually normal saline solution or lactated Ringer's solution) at a rate sufficient to maintain urinary output >30 ml/hr. Colloid solutions are avoided in the initial phases (but can be used later) because of the possibility of increased edema formation as a result of the increased capillary permeability.

*Nursing Management Plan*

*Deficient Knowledge*

**Definition:** Absence or deficiency of cognitive information related to a specific topic

Deficient Knowledge Related to Cognitive/Perceptual Learning Limitations

(e.g., sensory overload, sleep deprivation, medications, anxiety, sensory deficits, language barrier)

**Defining Characteristics**

• Verbalized statement of inadequate knowledge of skills
• Verbalization of inadequate recall of information
• Verbalization of inadequate understanding of information
• Evidence of inaccurate follow-through of instructions
• Inadequate demonstration of a skill
• Lack of compliance with prescribed behavior

*Outcome Criteria*
• Patient participates actively in necessary and prescribed health behaviors.
• Patient verbalizes adequate knowledge or demonstrates adequate skills.

*Nursing Interventions and Rationale*

1. Determine specific cause of patient’s cognitive or perceptual limitation.

2. Provide uninterrupted rest period before teaching session to *decrease fatigue and encourage optimal state for learning and retention*.

3. Manipulate environment as much as possible to *provide quiet and uninterrupted learning sessions*.

• Ensure that lights are bright enough to see teaching aids but not too bright.
• Schedule care and medications to allow uninterrupted teaching periods.
• Move patient to quiet, private room for teaching if possible.

4. Adapt teaching sessions and materials to patient's and family's levels of education and ability to understand.

• Provide printed material appropriate to reading level.
• Use terminology understood by the patient.
• Provide printed materials in patient's primary language *if possible*.
• Use interpreters during teaching sessions *when necessary*.

5. Teach only present-tense focus during periods of sensory overload.

6. Determine potential effects of medications on ability to retain or recall information.

• Avoid teaching critical content while patient is taking sedatives, analgesics, or other medications that affect memory.

7. Reinforce new skills and information in several teaching sessions. Use several senses when possible in teaching session (e.g., see a film, hear a discussion, read printed information, and demonstrate skills related to self-injection of insulin).
8. Reduce patient's anxiety.

- Listen attentively, and encourage verbalization of feelings.
- Answer questions as they arise in a clear and succinct manner.
- Elicit patient's concerns, and address those issues first.
- Give only correct and relevant information.
- Continually assess response to teaching session, and discontinue if anxiety increases or physical condition becomes unstable.
- Provide nonthreatening information before more anxiety-producing information is presented.
- Plan for several teaching sessions so information can be divided into small, manageable packages.

Deficient Knowledge Related to Lack of Previous Exposure to Information

Defining Characteristics

- Verbalized statement of inadequate knowledge or skills
- New diagnosis or health problem requiring self-management or care
- Lack of prior formal or informal education about the specific health problem
- Demonstration of inappropriate behaviors related to management of health problem

Outcome Criteria

- Patient verbalizes adequate knowledge about or performs skills related to disease process, its causes, factors related to onset of symptoms, and self-management of disease or health problem.
- Patient actively participates in health behaviors required for performance of a procedure or in those behaviors enhancing recovery from illness and preventing recurrence or complications.
**Nursing Interventions and Rationale**

1. Determine existing level of knowledge or skill.

2. Assess factors that affect the knowledge deficit
   - Learning needs, including patient's priorities and the necessary knowledge and skills for safety.
   - Learning ability of client, including language skills, level of education, ability to read, preferred learning style.
   - Physical ability to perform prescribed skills or procedures; consider effect of limitations imposed by treatment such as bedrest, restriction of movement by intravenous or other equipment, or effect of sedatives or analgesics.
   - Psychologic effect of stage of adaptation to disease.
   - Activity tolerance and ability to concentrate.
   - Motivation to learn new skills or gain new knowledge.

3. Reduce or limit barriers to learning:
   - Provide consistent nurse/patient contact to encourage development of trusting and therapeutic relationship.
   - Structure environment to enhance learning; control unnecessary noise, interruptions.
   - Individualize teaching plan to fit patient's current physical and psychologic status.
   - Delay teaching until patient is ready to learn.
   - Conduct teaching sessions during period of day when patient is most alert and receptive.
   - Meet patient's immediate learning needs as they arise (e.g., give brief explanation of procedures when they are performed).
4. Promote active participation in the teaching plan by the patient and family:
   • Solicit input during development of plan.
   • Develop mutually acceptable goals and outcomes.
   • Solicit expression of feelings and emotions related to new responsibilities.
   • Encourage questions.
5. Conduct teaching sessions, using the most appropriate teaching methods.
6. Repeat key principles, and provide them in printed form for reference at a later time.
7. Give frequent feedback to patient when practicing new skills.
8. Use several teaching sessions when appropriate. New information and skills should be reinforced several times after initial learning.
9. Initiate referrals for follow-up if necessary:
   • Health educators.
   • Home health care.
   • Rehabilitation programs.
   • Social services.
10. Evaluate effectiveness of teaching plan, based on patient's ability to meet preset goals and objectives to determine need for further teaching.

Nursing Management Plan

Disturbed Body Image

Definition: Confusion in mental picture of one's physical self
Disturbed Body Image Related to Actual Change in Body Structure, Function, or Appearance

Defining Characteristics
• Actual change in appearance, structure, or function
• Avoidance of looking at body part
• Avoidance of touching body part
• Hiding or overexposing body part (intentional or unintentional)
• Trauma to nonfunctioning part
• Change in ability to estimate spatial relationship of body to environment
• Verbalization of the following:
  —
  Fear of rejection or reaction by others
  —
  Negative feeling about body
  —
  Preoccupation with change or loss
  —
  Refusal to participate in or to accept responsibility for self-care of altered body part
• Personalization of part or loss with a name
• Depersonalization of part or loss by use of impersonal pronouns
• Refusal to verify actual change

Outcome Criteria
• Patient verbalizes the specific meaning of the change to him or her.
• Patient requests appropriate information about self-care.
• Patient completes personal hygiene and grooming daily with or without help.
• Patient interacts freely with family or other visitors.
• Patient participates in the discussions and conferences related to planning his or her medical and nursing management in the critical care unit and transfer from the unit.
• Patient talks with trained visitors (support-group representatives) at least twice about
his or her loss.

Nursing Interventions and Rationale

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1. Evaluate patient's mental, physical, and emotional state; recognize assets, strengths, response to illness, coping mechanisms, past experience with stress, and support system.

2. Appraise the response of family and significant others. **Body image is derived from the “reflected appraisals” of family and significant others.**

3. Determine the patient's goals and readiness for learning.

4. Provide the necessary information to help the patient and family adapt to the change. Clarify misconceptions about future limitations.

5. Permit and encourage the patient to express the significance of the loss or change; note nonverbal behavior responses.

6. Allow and encourage the patient's expression of anxiety. **Anxiety is the most predominant emotional response to a body image disturbance.**

7. Recognize and accept the use of denial as an adaptive defense mechanism when used early and temporarily.

8. Recognize maladaptive denial as that which interferes with the patient's progress and/or alienates support systems. Use confrontation.

9. Provide an opportunity for the patient to discuss sexual concerns.

10. Touch the affected body part **to provide the patient with sensory information about altered body structure and/or function.**

11. Encourage and provide movement of altered body part **to establish kinesthetic feedback. This enables the person to know his or her body as it now exists.**

12. Prepare the patient to look at the body part. Call the body part by its anatomic name
(e.g., stump, stoma, limb) as opposed to “it” or “she.” The use of impersonal pronouns increases a sense of fantasy and depersonalization of the body part.

13. Allow the patient to experience excellence in some aspect of physical functioning—walking, turning, deep breathing, healing, self-care—and point out progress and accomplishment. This helps to balance the patient’s sense of dysfunction with function.

14. Avoid false reassurance. Acknowledge the difficulty of incorporating the altered body part or function into one's body image. This evidences the nurse’s sensitivity and promotes trust.

15. Talk with the patient about his or her life, generativity, and accomplishments. Patients with disturbances in body image frequently see themselves in a distortedly “narrow” sense. Encouraging a wider focus of themselves and their life reduces this distortion.

16. Help the patient explore realistic alternatives.

17. Recognize that incorporating a body change into one's body image takes time. Avoid setting unrealistic expectations and thereby inadvertently reinforcing a low self-esteem.

18. Suggest the use of additional resources such as trained visitors who have mastered situations similar to those of the patient. Refer the patient to a psychiatric liaison nurse or psychiatrist if needed.

Disturbed Body Image Related to Functional Dependence on Life-Sustaining Technology (e.g., ventilator, dialysis, IABP, halo traction)

Defining Characteristics

• Actual change in function requiring permanent or temporary replacement

• Refusal to verify actual loss

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• Verbalization of the following: feelings of helplessness, hopelessness, powerlessness, fear of failure to wean from technology

*Outcome Criteria*

• Patient verifies actual change in function.

• Patient does not refuse or fight technologic intervention.

• Patient verbalizes acceptance of expected change in lifestyle.

*Nursing Interventions and Rationale*

1. Evaluate patient's response to the technologic intervention.

2. Assess responses of family and significant others. *Body image is derived from the “reflected appraisals” of family and significant others.*

3. Provide information needed by patient and family.

4. Promote trust, security, comfort, and privacy.

5. Recognize anxiety. Allow and encourage its expression. *Anxiety is the most predominant emotion accompanying body image alterations.* Implement nursing management plan of care, Anxiety.

6. Assist patient to recognize his or her own functioning and performance in the face of technology. For example, assist patient to distinguish spontaneous breaths from mechanically delivered breaths. *The activity will assist in weaning patient from the ventilator when feasible. To establish realistic, accurate body boundaries, a patient needs help to separate himself or herself from the technology that is supporting his or her functioning. Any participation or function on the part of the patient during periods of dependency is helpful in preventing and/or resolving an alteration in body image.*

7. Plan for discontinuation of the treatment (e.g., weaning from ventilator). Explain procedure that will be followed, and be present during its initiation.
8. Plan for transfer from the critical care environment.

9. Document care, ensuring an up-to-date management plan is available to all involved caregivers.

Nursing Management Plan

Disturbed Sleep Pattern

Definition: Time-limited disruption of sleep (natural, periodic suspension of consciousness) amount and quality

Disturbed Sleep Pattern Related to Fragmented Sleep

Defining Characteristics

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• Decreased sleep during one block of sleep time
• Daytime sleepiness
• Decreased sleep

Less than one half of normal total sleep time

Decreased slow-wave, or rapid-eye-movement (REM), sleep

• Anxiety
• Fatigue
• Restlessness
• Disorientation and hallucinations
• Combativeness
• Frequent awakenings

Outcome Criteria

• Patient's total sleep time approximates patient's normal.
• Patient can complete sleep cycles of 90 minutes without interruption.
• Patient has no delusions or hallucinations.
• Patient has reality-based thought content.

*Nursing Interventions and Rationale*

1. Assess normal sleep pattern on admission and any history of sleep disturbance or chronic illness that may affect sleep or sedative/hypnotic use. Promote normal sleep activity while patient is in critical care unit. Assess sleep effectiveness by asking patient how his or her sleep in the hospital compares with sleep at home. **The best treatment for sleep pattern disturbance is prevention.**

2. Promote comfort, relaxation, and a sense of well-being. Treat pain; change, smooth, or refresh bed linens at bedtime; and provide oral hygiene. Eliminate stressful situations before bedtime. Use relaxation techniques, imagery, music, massage, or warm blankets. Other interventions may include having a close family member sit beside the bed and providing the patient with his or her own garments or coverings. Individual patients may prefer quiet or may prefer the background noise of the television or music to best promote sleep. Provide a comfortable room temperature.

3. Minimize noise, particularly that of the staff and noisy equipment. Reduce the level of environmental stimuli. Dim lights at night.

4. Foods containing tryptophan (e.g., milk, turkey) may be appropriate because these promote sleep.

5. Plan nap times to assist in approximating the patient’s normal 24-hour sleep time.

6. Minimize awakenings to allow for at least 90-minute sleep cycles. Continually assess the need to awaken the patient, particularly at night. Distinguish between essential and nonessential nursing tasks. Organize nursing management to allow for maximal amount of uninterrupted sleep while ensuring close monitoring of the patient's condition. Whenever possible, monitor physiologic parameters without waking the
patient. Coordinate awakenings with other departments, such as respiratory therapy, laboratory, and x-ray, to minimize sleep interruptions.

7. Be aware of the effects of commonly used medications on sleep. Many sedative and hypnotic medications decrease REM sleep. Sedative and analgesic medications should not be withheld, but rather, drugs that minimally disrupt sleep are to be used to complement comfort measures, with dosages reduced gradually as the medication is no longer necessary. Do not abruptly withdraw REM-suppressing medications because this can result in “REM rebound.”

8. Document amount of uninterrupted sleep per shift, especially sleep episodes lasting longer than 2 hours. This can be effectively documented as part of the 24-hour flow sheet and reported routinely, shift to shift. Sleep pattern disturbance is diagnosed, treated, and resolved more efficiently when formally documented in this manner.

Nursing Management Plan

Dysfunctional Ventilatory Weaning Response

Definition: Inability to adjust to lowered levels of mechanical ventilator support that interrupts and prolongs the weaning process

Dysfunctional Ventilatory Weaning Response (DVWR) Related to Physical, Psychologic, or Situational Factors

Defining Characteristics

Mild DVWR

- Responds to lowered levels of mechanical ventilator support with:
  
  Restlessness

  —

  Slightly increased respiratory rate from baseline
Expressed feelings of increased need for oxygen; breathing discomfort; fatigue; warmth
Queries about possible machine malfunction
Increased concentration on breathing

**Moderate DVWR**

- Responds to lowered levels of mechanical ventilator support with:
  - Slight baseline increase in blood pressure <20 mm Hg
  - Slight baseline increase in heart rate <20 beats per minute (beats/min)
  - Baseline increase in respiratory rate <5 breaths/min

Hypervigilance to activities

- Inability to respond to coaching

- Inability to cooperate

- Apprehension

- Diaphoresis

- Eye-widening (“wide-eyed look”)

- Decreased air entry on auscultation
Color changes: pale, slight cyanosis

—

Slight respiratory accessory muscle use

**Severe DVWR**

- Responds to lowered levels of mechanical ventilator support with:
  
  —

  Agitation
  
  —

  Deterioration in arterial blood gases from current baseline
  
  —

  Baseline increase in blood pressure >20 mm Hg
  
  —

  Baseline increase in heart rate >20 beats/min
  
  —

  Respiratory rate increases significantly from baseline
  
  —

  Profuse diaphoresis
  
  —

  Full respiratory accessory muscle use
  
  —

  Shallow, gasping breaths
  
  —

  Paradoxic abdominal breathing
  
  —

  Discoordinated breathing with the ventilator
Decreased level of consciousness

Adventitious breath sounds, audible airway secretions

Cyanosis

**Outcome Criteria**

- Airway is clear.
- Underlying disorder is resolving.
- Patient is rested, and pain is controlled.
- Nutritional status is adequate.
- Patient has feelings of perceived control, situational security, and trust in the nurses.
- Patient is able to adapt to selected levels of ventilator support without undue fatigue.

**Nursing Interventions and Rationale**

1. Communicate interest and concern for the patient's well-being, and demonstrate confidence in ability to manage weaning process to *instill trust in the patient*.

2. Use normalizing strategies (e.g., grooming, dressing, mobilizing, social conversation) to *reinforce the patient's self-esteem and feeling of identity*.

3. Identify parameters of the patient's usual functioning before the weaning process begins to *facilitate early identification of problems*.

4. Identify the patient's strengths and resources that can be mobilized to *enhance the patient's coping and maximize weaning effort*.

5. Note concerns that adversely affect the patient's comfort and confidence, and manage them discretely to *facilitate the patient's ease*.
6. Praise successful activities, encourage a positive outlook, and review the patient's positive progress to date to increase the patient's perceived self-efficacy.

7. Inform the patient of his or her situation and weaning progress to permit the patient as much control as possible.

8. Teach the patient about the weaning process and how he or she can participate in the process.

9. Negotiate daily weaning goals with the patient to gain cooperation.

10. Position the patient with the head of the bed elevated to optimize respiratory efforts.

11. Coach the patient in breath control by regular demonstrations of slow, deep, rhythmic patterns of breathing to assist with dyspnea.

12. Remain visible in the room and reassure the patient that help is immediately available if needed to reduce the patient's anxiety and fearfulness.

13. Encourage the patient to view weaning trials as a form of training, regardless of whether the weaning goal is achieved to avoid discouragement.

14. Encourage the patient to maintain emotional calmness by reassuring, being present, comforting, talking down if emotionally aroused, and reinforcing the idea that he or she can and will succeed.

15. Monitor the patient's status frequently to avoid undue fatigue and anxiety.

16. Provide regular periods of rest by reducing activities, maintaining or increasing ventilator support, and providing oxygen as needed before fatigue advances.

17. Provide distraction (e.g., visitors, radio, television, conversation) when the patient's concentration starts to create tension and increases anxiety.

18. Ensure adequate nutritional support, sufficient rest and sleep time, and sedation or pain control to promote the patient's optimal physical and emotional comfort.
19. Start weaning early in the day *when the patient is most rested.*

20. Restrict unnecessary activities and visitors who do not cooperate with weaning strategies *to minimize energy demands on the patient during the weaning process.*

21. Coordinate necessary activities *to promote adequate time for rest and relaxation.*

22. Monitor the patient’s underlying disease process *to ensure it is stabilized and under control.*

23. Advocate for additional resources (e.g., sedation, analgesia, rest) needed by the patient *to maximize comfort status.*

24. Develop and adhere to an individualized plan of care *to promote the patient’s feelings of control.*

**Nursing Management Plan**

**Excess Fluid Volume**

*Definition:* Increased isotonic fluid retention

Excess Fluid Volume Related to Increased Secretion of Antidiuretic Hormone (ADH)

*Defining Characteristics*

- Headache
- Decreased sensorium
- Weight gain over short period
- Intake greater than output
- Increased pulmonary artery occlusion pressure (PAOP)
- Increased central venous pressure (CVP)
- Urine output <30 ml/hr
- Serum sodium <120 mEq/L
• Serum osmolality <275 mOsm/kg
• Urine osmolality greater than serum osmolality

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• Urine sodium >200 mEq/L
• Urine specific gravity >1.03

Outcome Criteria
• Weight returns to baseline.
• Urine output is >30 ml/hr.
• Serum sodium is 135–145 mEq/L.
• Urine specific gravity is 1.005–1.030.

Nursing Interventions and Rationale
1. Monitor electrocardiogram (ECG) rhythm continuously for dysrhythmias caused by electrolyte imbalance.

2. Restrict patient's fluids to 500 ml less than output per day to decrease fluid retention.

3. Provide patient chilled beverages high in sodium content such as tomato juice or broth to increase sodium intake.

4. Collaborate with physician regarding administration of demeclocycline, lithium, and/or narcotic agonists to inhibit renal response to ADH.

5. Collaborate with physician regarding administration of hypertonic saline and furosemide for rapid correction of severe sodium deficit and diuresis of free water.

a. Administer hypertonic saline at a rate of 1 to 2 ml/kg/hr until the patient's serum sodium is increased no greater than 1 to 2 mEq/L/hr.

6. Weigh patient daily (at same time, in same amount of clothing, and preferably with same scale) to ensure accuracy of readings.

7. Provide frequent mouth care to prevent breakdown of oral mucous membranes.
8. Initiate seizure precautions because patient is at high risk as a result of hyponatremia.

a. Pad side rails of bed to protect patient from injury.

b. Remove any objects from immediate environment that could injure patient in the event of a seizure.

c. Keep appropriate-size oral airway at bedside to assist with airway management postseizure.

9. Collaborate with physician regarding administration of medications to prevent constipation caused by decreased fluid intake and immobility.

10. Maintain surveillance for symptoms of hyponatremia (head-ache, abdominal cramps, weakness) and congestive heart failure (dyspnea, rales, increased CVP and PAOP).

Excess Fluid Volume Related to Renal Dysfunction

Defining Characteristics

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- Weight gain that occurs during a 24– to 48–hour period
- Dependent pitting edema
- Ascites in severe cases
- Fluid crackles on lung auscultation
- Exertional dyspnea
- Oliguria or anuria
- Hypertension
- Engorged neck veins
- Decrease in urinary osmolality as renal failure progresses
- CVP >15 cm of H2O
- PAOP 20–25 mm Hg
**Outcome Criteria**

- Weight returns to baseline.
- Edema or ascites is absent or reduced to baseline.
- Lungs are clear to auscultation.
- Exertional dyspnea is absent.
- Blood pressure returns to baseline.
- Heart rate returns to baseline.
- Neck veins are flat.
- Mucous membranes are moist.

**Nursing Interventions and Rationale**

1. Promote skin integrity of edematous areas by frequent repositioning and elevation of areas where possible. Avoid massaging pressure points or reddened areas of skin because this results in further tissue trauma.

2. Plan patient care to provide rest periods to not heighten exertional dyspnea.

3. Weigh patient daily (at same time, in same amount of clothing, and preferably with same scale).

4. Instruct the patient about the correlation between fluid intake and weight gain, using commonly understood fluid measurements; for example, ingesting 4 cups (1000 ml) of fluid results in an approximate 2–pound weight gain in the anuric patient.

**Hyperthermia**

**Definition:** Body temperature elevated above normal range

Hyperthermia Related to Increased Metabolic Rate

**Defining Characteristics**
• Increased body temperature above normal range
• Seizures
• Flushed skin
• Increased respiratory rate
• Tachycardia
• Skin warm to touch
• Diaphoresis

Outcome Criteria
• Temperature is within normal range.
• Respiratory rate and heart rate are within patient's baseline range.
• Skin is warm and dry.

Nursing Interventions and Rationale

1. Monitor temperature every 15 minutes to 1 hour until within normal range and stable and then every 4 hours to maintain close surveillance for temperature fluctuations and evaluate effectiveness of interventions.
   a. Use temperature taken from pulmonary artery catheter or bladder catheter if available because these methods closely reflect core body temperature.
   b. Use tympanic membrane temperature if core body temperature devices are unavailable.
   c. Use rectal temperature if none of the methods listed above are available.

2. Collaborate with physician regarding administration of antithyroid medications to block the synthesis and release of thyroid hormone.

3. Collaborate with physician regarding the use of cooling blanket to facilitate heat loss via conduction.
   a. Wrap hands, feet, and genitalia to protect them from maceration during cooling
and decrease chance of shivering.

b. Avoid rapidly cooling the patient and overcooling the patient because this initiates the heat-conserving response (i.e., shivering).

4. Place ice packs in patient's groin and axilla to facilitate heat loss via conduction.

5. Maintain patient on bedrest to decrease the effects of activity on the patient's metabolic rate.

6. Provide tepid sponge baths to facilitate heat loss via evaporation.

7. Decrease the patient’s room temperature to facilitate radiant heat loss.

8. Place fan near patient to circulate cool air to facilitate heat loss via convection.

9. Provide patient with nonrestrictive gown and lightweight bed coverings to allow heat to escape from the patient's trunk.

10. Collaborate with physician and respiratory therapist on the administration of oxygen to maintain Spo2 >90% because patient has increased oxygen consumption secondary to increased metabolic rate.

11. Collaborate with physician regarding use of antipyretic medications to facilitate patient comfort.

12. Collaborate with physician regarding use of intravenous and oral fluids to maintain adequate hydration of the patient.

Hyperthermia Related to Pharmacogenic Hypermetabolism (Malignant Hyperthermia)

Defining Characteristics

Early Signs

- Blood pressure (BP) >140/90 mm Hg
- Profuse diaphoresis
- Pulse rate >100 beats/min
• Masseter and general skeletal muscle rigidity and fasciculations
• Tachypnea
• Decreased level of consciousness

Late Signs
• Increasing core body temperature up to 42° to 43° C (107.6° to 109.4° F)
• Hot skin
• High-output left ventricular failure
• Systemic BP <90 mm Hg
• Pulse rate >100 beats/min and ventricular dysrhythmias
• Cardiac index (CI) >4.0 L/min/m2
• Pulmonary artery occlusion pressure (PAOP) and pulmonary artery diastolic (PAD) pressure >15 mm Hg; possible pulmonary edema
• Continued skeletal muscle rigidity and fasciculations
• Pao2 <80 mm Hg

Outcome Criteria
• Core body temperature is below 38.3° C (101° F).
• Muscle rigidity and fasciculations are absent.
• Patient is alert and oriented.
• Pupils are normoreactive.
Nursing Interventions and Rationale

1. Obtain the emergency kit for malignant hyperthermia. It is recommended that health care institutions have an emergency malignant hyperthermia kit available that contains the items mentioned in the following plan.

2. Collaborate with the physician to implement measure to rapidly decrease metabolism:
   a. Administer dantrolene (Dantrium), which relaxes skeletal muscles by reducing the release of calcium from the sarcoplasmic reticulum.
   b. Observe for infiltration of dantrolene into surrounding tissues. Dantrolene is very alkaline and irritating to tissues.

3. Collaborate with the physician to initiate cooling measures:
   a. Administer cold intravenous (IV) solutions (IV bag has been submerged in ice bath before solution is administered).
   b. Provide cool-water sponge bath.
   c. Apply cooling blanket until temperature is within 1° to 3° F of desired level to avoid “overshoot,” in which excessive cooling lowers the body temperature below the desired range.
   d. Institute iced saline lavages of stomach, rectum, and bladder.
   e. Monitor core temperature continuously to avoid overcooling.

4. Collaborate with physician to implement interventions to reverse metabolic and respiratory acidosis:
   a. Administer sodium bicarbonate as necessary to treat metabolic acidosis.
   b. Hyperventilate patient with 100% oxygen; then ventilate with 15–20 ml/kg tidal volume at 15–20 breaths/ min.
   c. Assess arterial blood gas (ABG) values frequently, and make ventilatory adjustments as necessary to remedy hypoxemia and hypercarbia.
5. Collaborate with physician to provide adequate nutrients to the tissues, and correct electrolyte imbalances:
   a. Administer 50% dextrose and regular insulin **to increase glucose uptake into liver to meet hypermetabolic needs of body and enhance the movement of potassium from extracellular fluid back into the cells.**
   b. Monitor serum electrolytes **to assess efficacy of previously mentioned action.**
   c. Monitor blood urea nitrogen (BUN) and creatinine levels **to evaluate for renal failure.**
   d. Monitor serum enzyme levels, particularly creatine phosphokinase (CPK) elevations **for indication of degree of muscle hyperactivity.**

6. Collaborate with physician to correct cardiovascular instability and dysrhythmias:
   a. Titrate vasoactive and inotropic drips per protocol to desired systemic BP, PAOP, and/or PAD.
   b. Follow critical care emergency standing orders about the administration of antidysrhythmic agents.

7. Collaborate with physician to maintain a high urinary output (>50 ml/hr):
   a. Administer osmotic agents (mannitol) **for excretion of excess fluid load and to increase urinary output to prevent renal failure.**
   b. Administer diuretics (furosemide) **to enhance secretion of myoglobin, potassium, sodium, and magnesium.**
   c. Administer supplemental potassium chloride as indicated by serum potassium levels.
   d. Administer steroids (e.g., Solu-Cortef) **for its mineralocorticoid effect of**
potassium excretion, to increase glomerular filtration rate, and to reduce cerebral edema.

8. Maintain surveillance for hematologic abnormalities:
   a. Monitor coagulation studies for indications of DIC and for efficacy of heparin therapy.
   b. Assess stool/urinary/nasogastric (NG) drainage for occult blood.

9. Weigh patient daily (at same time, in same amount of clothing, and preferably with same scale) to assist in assessment of hydration status.

Nursing Management Plan

Hypothermia

Definition: Body temperature below normal range

Hypothermia Related to Decreased Metabolic Rate

Defining Characteristics

- Reduction in body temperature below normal range
- Shivering
- Pallor
- Piloerection
- Hypertension
- Skin cool to touch
- Tachycardia
- Decreased capillary refill

Outcome Criteria

- Temperature is within normal range.
- Heart rate is within patient's baseline range.
• Skin is warm and dry.
• Capillary refill is normal.

Nursing Interventions and Rationale

1. Monitor temperature every 15 minutes to 1 hour until within normal range and stable and then every 4 hours to maintain close surveillance for temperature fluctuations and evaluate effectiveness of interventions.

   a. Use temperature taken from pulmonary artery catheter or bladder catheter if available because these methods closely reflect core body temperature.

   b. Use tympanic membrane temperature if core body temperature devices are unavailable.

   c. Use rectal temperature if none of the methods listed above are available.

2. Collaborate with physician regarding administration of thyroid medications to replace lacking thyroid hormone.

3. Collaborate with physician regarding the use of fluid-filled heating blanket to facilitate rewarming via conduction.

4. Initiate forced air-warming therapy to facilitate convective heat gain.

5. Provide patient with warm blankets to facilitate heat transfer to the patient.

6. Increase the patient's room temperature to decrease radiant heat loss.

7. Replace wet patient gown and bed linen promptly to decrease evaporative heat loss.

8. Warm intravenous fluids and blood products to facilitate rewarming via conduction.

Hypothermia Related to Exposure to Cold Environment, Trauma, or Damage to the Hypothalamus

Defining Characteristics

• Core body temperature below 35° C (95° F)
• Skin cold to touch
• Slurred speech, incoordination

• At temperature below 33° C (91.4° F):
  —
  Cardiac dysrhythmias (atrial fibrillation, bradycardia)
  —
  Cyanosis
  1601
  —
  Respiratory alkalosis

• At temperatures below 32° C (89.6° F):
  —
  Shivering replaced by muscle rigidity
  —
  Hypotension
  —
  Dilated pupils

• At temperatures below 28° to 29° C (82.4° to 84.2° F):
  —
  Absent deep tendon reflexes
  —
  (3 to 4 breaths/min to apnea)
  —
  Ventricular fibrillation possible

• At temperatures below 26° to 27° C (78.8° to 80.6° F):
  —
Coma
—
Flaccid muscles
—
Fixed, dilated pupils
—
Ventricular fibrillation to cardiac standstill
—
Apnea

**Outcome Criteria**

- Core body temperature is greater than 35° C (95° F).
- Patient is alert and oriented.
- Cardiac dysrhythmias are absent.
- Acid-base balance is normal.
- Pupils are normoreactive.

**Nursing Interventions and Rationale**

1. Monitor core body temperature continuously.
2. Collaborate with the physician regarding the need for intubation and mechanical ventilation.
   a. Heated air or oxygen can be added *to help rewarm the body core*.
3. Maintain cardiopulmonary resuscitation (CPR) and advanced cardiac life support
(ACLS) until core body temperature is up to at least 29.5°C (85.1°F) before determining that patients cannot be resuscitated. **Electrical defibrillation is usually successful in terminating ventricular fibrillation if the temperature is greater than 28°C (82.4°F).**

4. Administer cardiac resuscitation drugs sparingly **because as the body warms, peripheral vasodilation occurs. Drugs that remain in the periphery are suddenly released, leading to a “bolus effect” that may cause fatal dysrhythmias.**

5. Monitor arterial blood gas (ABG) values to **direct further therapy**, and ensure that the pH, Pao2, and Paco2 are corrected for temperature.

6. Rewarm patient rapidly **because the pathophysiologic changes associated with chronic hypothermia have not had time to evolve.**
   a. Institute rapid, active rewarming by immersion in warm water (38° to 43° C) (100.4° to 109.4° F).
   b. Apply thermal blanket at 36.6° to 37.7° C (97.9° to 99.9° F). Some researchers suggest rewarming only the torso or trunk first, leaving the extremities exposed to room temperature. **This is to prevent early peripheral vasodilation with abrupt redistribution of intravascular volume. This also prevents colder blood trapped in the extremities from returning to the body core before the heart is rewarmed.**
   c. Perform rapid core rewarming with heated (37° to 43° C; 98.6° to 109.4° F) intravenous (IV) infusion, hemodialysis, peritoneal dialysis, and colonic or gastric irrigation fluids.

7. Monitor peripheral circulation because gangrene of the fingers and toes is a common complication of accidental hypothermia.

**Nursing Management Plan**
**Imbalanced Nutrition: Less Than Body Requirements**

**Definition:** Intake of nutrients insufficient to meet metabolic needs

Imbalanced Nutrition: Less than Body Requirements Related to Lack of Exogenous Nutrients and Increased Metabolic Demand

**Defining Characteristics**

- Unplanned weight loss of 20% of body weight within the past 6 months
- Serum albumin <3.5 g/dl
- Total lymphocytes <1500/mm3
- Anergy
- Negative nitrogen balance
- Fatigue; lack of energy and endurance
- Nonhealing wounds
- Daily caloric intake less than estimated nutritional requirements
- Presence of factors known to increase nutritional requirements (e.g., sepsis, trauma, multiple organ dysfunction syndrome [MODS])
- Maintenance of nothing by mouth (NPO) status for >7–10 days
- Long-term use of 5% dextrose intravenously
- Documentation of suboptimal calorie counts
- Drug or nutrient interaction that might decrease oral intake (e.g. chronic use of bronchodilators, laxatives, anticonvulsives, diuretics, antacids, narcotics)
- Physical problems with chewing, swallowing, choking, and salivation and presence of altered taste, anorexia, nausea, vomiting, diarrhea, or constipation

**Outcome Criteria**

- Patient exhibits stabilization of weight loss or weight gain of ½lb. daily.
• Serum albumin is >3.5 g/dl.
• Total lymphocytes are <1500/mm³.
• Patient has positive response to cutaneous skin antigen testing.
• Patient is in positive nitrogen balance.
• Wound healing is evident.
• Daily caloric intake equals estimated nutritional requirements.
• Increased ambulation and endurance are evident.

_Nursing Interventions and Rationale_

1. Inquire if patient has any food allergies and food preferences to ensure the food provided to the patient is not contraindicated.
2. Monitor patient's caloric intake and weight daily to ensure adequacy of nutritional interventions.
3. Collaborate with dietitian regarding patient's nutritional and caloric needs to determine the appropriateness of the patient's diet to meet those needs.
4. Monitor patient for signs of nutritional deficiencies to facilitate evaluation of extent of nutritional deficient.
5. Provide patient with oral care prior to eating to ensure optimal consumption of diet.
6. Assist patient to eat as appropriate to ensure optimal consumption of diet.
7. Collaborate with physician regarding the administration of parenteral and enteral nutrition as needed.

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_Nursing Management Plan_

**Impaired Gas Exchange**

**Definition:** Excess or deficit in oxygenation and/or carbon dioxide elimination at the alveolarcapillary membrane
Impaired Gas Exchange Related to Alveolar Hypoventilation

Defining Characteristics

• Abnormal arterial blood gas (ABG) values (decreased Pao2, increased Paco2, decreased pH, decreased Sao2)
• Somnolence
• Neurobehavioral changes (restlessness, irritability, confusion)
• Tachycardia or dysrhythmias
• Central cyanosis

Outcome Criteria

• ABG values are within patient's baseline.
• Central cyanosis is absent.

Nursing Interventions and Rationale

1. Initiate continuous pulse oximetry or monitor Spo2 every hour.

2. Collaborate with physician on the administration of oxygen to maintain an Spo2 >90%.
   a. Administer supplemental oxygen via appropriate oxygen-delivery device to *increase driving pressure of oxygen in the alveoli.*
   b. If supplemental oxygen alone is not effective, administer continuous positive airway pressure (CPAP) or mechanical ventilation with positive end-expiratory pressure (PEEP) to *open collapsed alveoli and increase the surface area for gas exchange.*

3. Prevent hypoventilation.
   a. Position patient in high-Fowler's position or semi-Fowler's position to *promote diaphragmatic descent and maximal inhalation.*
   b. Assist with deep-breathing exercises and/or incentive spirometry with sustained
maximal inspiration 5 to 10 times/hr to help reinflate collapsed portions of the lung. See the nursing management plan for Ineffective Breathing Pattern Related to Decreased Lung Expansion for further instructions.

c. Treat pain, if present, to prevent hypoventilation and atelectasis. Implement the nursing management plan of care, Acute Pain Related to Transmission and Perception of Cutaneous, Visceral, Muscular, or Ischemic Impulses.

4. Assist physician with intubation and initiation of mechanical ventilation as indicated.

Impaired Gas Exchange Related to Ventilation/Perfusion Mismatching or Intrapulmonary Shunting

Defining Characteristics

- Abnormal ABG values (decreased Pao2, decreased Sao2)
- Somnolence
- Neurobehavioral changes (restlessness, irritability, confusion)
- Central cyanosis

Outcome Criteria

- ABG values are within patient's baseline.
- Central cyanosis is absent.

Nursing Interventions and Rationale

1. Initiate continuous pulse oximetry, or monitor Spo2 every hour.

2. Collaborate with physician on the administration of oxygen to maintain an Spo2 >90%.

   a. Administer supplemental oxygen via appropriate oxygen-delivery device to increase driving pressure of oxygen in the alveoli.

   b. If supplemental oxygen alone is not effective, administer CPAP or mechanical ventilation with PEEP to open collapsed alveoli and increase the surface area for gas exchange.
3. Position patient to optimize ventilation/perfusion matching.
   a. For patient with unilateral lung disease, position with the good lung down
      because gravity will improve perfusion to this area, and this will best
      match ventilation with perfusion.
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   b. For patient with bilateral lung disease, position with the right lung down
      because this lung is larger than the left and affords a greater area for
      ventilation and perfusion, or change position every 2 hours, favoring positions
      that improve oxygenation.
   c. Avoid any position that seriously compromises oxygenation status.

4. Perform procedures only as needed and provide adequate rest and recovery time in
   between to prevent desaturation.

5. Collaborate with the physician regarding the administration of the following:
   a. Sedatives to decrease ventilator asynchrony and facilitate patient's sense
      of control.
   b. Neuromuscular blocking agents to prevent ventilator asynchrony and
      decrease oxygen demand.
   c. Analgesics to treat pain if present. Implement the nursing management plan
      of care, Acute Pain Related to Transmission and Perception of Cutaneous,
      Visceral, Muscular, or Ischemic Impulses.

6. If secretions are present, implement the nursing management plan of care, Ineffective
   Airway Clearance Related to Excessive Secretions or Abnormal Viscosity of Mucus.

Nursing Management Plan

Impaired Spontaneous Ventilation

Definition: Decreased energy reserves results in an individual's inability to maintain
breathing adequate to support life

Impaired Spontaneous Ventilation Related to Respiratory Muscle Fatigue or Metabolic Factors

**Defining Characteristics**

- Dyspnea and apprehension
- Increased metabolic rate
- Increased restlessness
- Increased use of accessory muscles
- Decreased tidal volume
- Increased heart rate
- Abnormal arterial blood gas (ABG) values (decreased Pao2, increased Paco2, decreased pH, decreased Sao2)
- Decreased cooperation

**Outcome Criteria**

- Metabolic rate and heart rate are within patient's baseline.
- Patient experiences eupnea.

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- ABG values are within patient's baseline.

**Nursing Interventions and Rationale**

1. Collaborate with the physician regarding the application of pressure support to the ventilator to assist patient in overcoming the work of breathing imposed by the ventilator and endotracheal tube.

2. Carefully snip excess length from the proximal end of the endotracheal tube to decrease dead space and thereby decrease the work of breathing.

3. Collaborate with the physician and dietitian to ensure that at least 50% of the diet's
nonprotein caloric source is in the form of fat versus carbohydrates to prevent excess carbon dioxide production.

4. Collaborate with the physician and respiratory therapist regarding the best method of weaning for individual patients because each situation is different and a variety of weaning options are available.

5. Collaborate with the physician and physical therapist regarding a progressive ambulation and conditioning plan to promote overall muscle conditioning and respiratory muscle functioning.

6. Determine the most effective means of communication for the patient to promote independence and reduce anxiety.

7. Develop a daily schedule and post it in patient's room to coordinate care and facilitate patient's involvement in the plan.

8. Treat pain, if present, to prevent respiratory splinting and hypoventilation.

Implement the nursing management plan of care, Acute Pain Related to Transmission and Perception of Cutaneous, Visceral, Muscular, or Ischemic Impulses.

9. Ensure that patient receives at least 2– to 4-hr intervals of uninterrupted sleep in a quiet, dark room. Collaborate with the physician and respiratory therapist regarding the use of full ventilatory support at night to provide respiratory muscle rest.

10. Place patient in semi-Fowler's position or in a chair at the bedside for best use of ventilatory muscles and to facilitate diaphragmatic descent.

11. Explain the weaning procedure to the patient before the trial so that patient will understand what to expect and how to participate.

12. Monitor patient during the weaning trial for evidence of respiratory muscle fatigue to avoid overtiring the patient.

13. Provide diversional activity during the weaning trial to reduce the patient's anxiety.
14. Collaborate with physician and respiratory therapist regarding the removal of the ventilator and artificial airway when patient has been successfully weaned.

**Nursing Management Plan**

**Impaired Swallowing**

1608

**Definition:** Abnormal functioning of the swallowing mechanism associated with deficits in oral, pharyngeal, or esophageal structure or function

Impaired Swallowing Related to Neuromuscular Impairment, Fatigue, and Limited Awareness

**Defining Characteristics**

- Evidence of difficulty swallowing
- Drooling
- Difficulty handling oral secretions
- Absence of gag, cough, and/or swallow reflex
- Moist, wet, gurgling voice quality
- Decreased tongue and mouth movements
- Presence of dysarthria
- Difficulty handling solid foods: Uncoordinated chewing or swallowing Stasis of
food in the oral cavity, wet-sounding voice or change in voice quality. Sneezing, coughing, or choking with eating. Delay in swallowing of more than 5 seconds.

Change in respiratory patterns

Difficultly handling liquids: Momentary loss of voice or change in voice quality.

Nasal regurgitation of liquids, coughing with drinking.

- Evidence of aspiration:

- Hypoxemia

- Productive cough

- Frothy sputum

- Wheezing, crackles, or rhonchi

- Temperature elevation

**Outcome Criteria**

- Evidence of swallowing difficulties is absent.

- Evidence of aspiration is absent.

**Nursing Interventions and Rationale**

1. Collaborate with physician and speech therapist regarding swallowing evaluation and rehabilitation program to **decrease the incidence of aspiration**.

2. Collaborate with physician and dietitian regarding a nutritional assessment and
nutritional plan to ensure that the patient is receiving enough nutrition.

3. Place the patient in an upright position with the head midline and the chin slightly down to keep food in the anterior portion of the mouth and to prevent it from falling over the base of the tongue into the open airway.

4. Provide patient with single-textured soft foods (e.g., cream cereals) that maintain their shape because these foods require minimal oral manipulation.

5. Avoid particulate foods (e.g., hamburger) and foods containing more than one texture (e.g., stew) because these foods require more chewing and oral manipulation.

6. Avoid dry foods (e.g., popcorn, rice, crackers) and sticky foods (e.g., peanut butter, bananas) because these foods are difficult to manipulate orally.

7. Provide patient with thick liquids (e.g., fruit nectar, yogurt) because thick liquids are more easily controlled in the mouth.

8. Thicken thin liquids (e.g., water, juice) with a thickening preparation or avoid them because thin liquids are easily aspirated.

9. Place foods in the uninvolved side of the mouth because oral sensitivity and function are greatest in this area.

10. Avoid the use of straws because they can deposit the liquid too far back in the mouth for the patient to handle.

11. Serve foods and liquids at room temperature because the patient may be overly sensitive to heat or cold.

12. Offer solids and liquids at different times to avoid swallowing solids before being properly chewed.

13. Provide oral hygiene after meals to clear food particles from the mouth that could be aspirated.

14. Collaborate with physician and pharmacist regarding oral medication administration to
15. Crush tablets (if appropriate) and mix with food that is easily formed into a bolus, use thickened liquid medications (if available), and/or embed small capsules into food to facilitate oral medication administration.

16. Inspect mouth for residue after all medication administration to ensure medication has been swallowed.

17. Educate patient and family on the swallowing problem, rehabilitation program, and emergency measures for choking.

Nursing Management Plan

**Impaired Verbal Communication**

**Definition:** Decreased, delayed, or absent ability to receive, process, transmit, and use a system of symbols

1610

Impaired Verbal Communication Related to Cerebral Speech Center Injury

**Defining Characteristics**

- Inappropriate or absent speech or responses to questions
- Inability to speak spontaneously
- Inability to understand spoken words
- Inability to follow commands appropriately through gestures
- Difficulty or inability to understand written language
- Difficulty or inability to express ideas in writing
- Difficulty or inability to name objects

**Outcome Criterion**

- Patient is able to make basic needs known.
Nursing Interventions and Rationale

1. Consult with physician and speech pathologist to determine the extent of the patient’s communication deficit (e.g., whether fluent, nonfluent, or global aphasia is involved).

2. Have the speech therapist post a list of appropriate ways to communicate with the patient in the patient’s room so that all nursing personnel can be consistent in their efforts.

3. Assess the patient’s ability to comprehend, speak, read, and write.
   - Ask questions that can be answered with a “yes” or a “no.” If a patient answers “yes” to a question, ask the opposite (e.g., “Are you hot?” “Yes.” “Are you cold?” “Yes.”). This may help determine whether in fact the patient understands what is being said.
   - Ask simple, short questions, and use gestures, pantomime, and facial expressions to give the patient additional clues.
   - Stand in the patient’s line of vision, giving a good view of your face and hands.
   - Have the patient try to write with a pad and pencil. Offer pictures and alphabet letters at which to point.
   - Make flash cards with pictures or words depicting frequently used phrases (e.g., glass of water, bedpan).

4. Maintain an uncluttered environment, and decrease external distractions that could hinder communication.

5. Maintain a relaxed and calm manner, and explain all diagnostic, therapeutic, and comfort measures before initiating them.

6. Do not shout or speak in a loud voice. Hearing loss is not a factor in aphasia, and shouting will not help.
7. Have only one person talk at a time. It is more difficult for the patient to follow a multisided conversation.

8. Use direct eye contact, and speak directly to the patient in unhurried, short phrases.

9. Give one-step commands and directions, and provide cues through pictures and gestures.

10. Try to ask questions that can be answered with a “yes” or a “no,” and avoid topics that are controversial, emotional, abstract, or lengthy.

11. Listen to the patient in an unhurried manner, and wait for his or her attempt to communicate.
   - Expect a time lag from when you ask the patient something until the patient responds.
   - Accept the patient's statement of essential words without expecting complete sentences.
   - Avoid finishing the sentence for the patient if possible.
   - Wait approximately 30 seconds before providing the word the patient may be attempting to find (except when the patient is very frustrated and needs something quickly, such as a bedpan).
   - Rephrase the patient's message aloud to validate it.
   - Do not pretend to understand the patient's message if you do not.

12. Encourage the patient to speak slowly in short phrases and to say each word clearly.

13. Ask the patient to write the message, if able, or draw pictures if only verbal communication is affected.

14. Observe the patient's nonverbal clues for validation (e.g., answers “yes” but shakes head “no”).
15. When handing an object to the patient, state what it is because hearing language spoken is necessary to stimulate language development.

16. Explain what has happened to the patient, and offer reassurance about the plan of care.

17. Verbally address the problem of frustration over inability to communicate, and explain that both the nurse and the patient need patience.

18. Maintain a calm, positive manner, and offer reassurance (e.g., “I know this is very hard for you, but it will get better if we work on it together”).

19. Talk to the patient as an adult. Be respectful, and avoid talking down to the patient.

20. Do not discuss the patient’s condition or hold conversations in the patient’s presence without including him or her in the discussion. This may be the reason some aphasic patients develop paranoid thoughts.

21. Do not exhibit disapproval of emotional utterances or spontaneous use of profanity; instead, offer calm, quiet reassurance.

22. If the patient makes an error in speech, do not reprimand or scold but try to compliment the patient by saying, “That was a good try.”

23. Delay conversation if the patient is tired. The symptoms of aphasia worsen if the patient is fatigued, anxious, or upset.

24. Be prepared for emotional outbursts and tears from patients who have more difficulty in expressing themselves than with understanding. The patient may become depressed, refuse treatment and food, ignore relatives, and push objects away. Comfort the patient with statements such as, “I know it’s frustrating and you feel sad, but you are not alone. Other people who have had strokes have felt the way you do. We will be here to help you get through this.”

Nursing Management Plan
**Ineffective Airway Clearance**

**Definition:** Inability to clear secretions or obstructions from the respiratory tract to maintain a clear airway

Ineffective Airway Clearance Related to Excessive Secretions or Abnormal Viscosity of Mucus

*Defining Characteristics*

- Abnormal breath sounds (displaced normal sounds, adventitious sounds, diminished or absent sounds)
- Ineffective cough with or without sputum
- Tachypnea, dyspnea
- Verbal reports of inability to clear airway

*Outcome Criteria*

- Cough produces thin mucus.
- Lungs are clear to auscultation.
- Respiratory rate, depth, and rhythm return to baseline.

*Nursing Interventions and Rationale*

1. Assess sputum for color, consistency, and amount.
2. Assess for clinical manifestations of pneumonia.
3. Provide for maximal thoracic expansion by repositioning, deep breathing, splinting, and pain management *to avoid hypoventilation and atelectasis*. If hypoventilation is present, implement the nursing management plan of care, Ineffective Breathing Pattern Related to Decreased Lung Expansion.
4. Maintain adequate hydration by administering oral and intravenous fluids (as ordered) *to thin secretions and facilitate airway clearance*.
5. Provide humidification to airways via oxygen-delivery device or artificial airway *to thin*
secretions and facilitate airway clearance.

6. Administer bland aerosol every 4 hours to facilitate expectoration of sputum.

7. Collaborate with the physician regarding the administration of the following:
   a. Bronchodilators to treat or prevent bronchospasms and facilitate expectoration of mucus.
   b. Mucolytics and expectorants to enhance mobilization and removal of secretions.
   c. Antibiotics to treat infection.

8. Assist with directed coughing exercises to facilitate expectoration of secretions. If patient is unable to perform cascade cough, consider using huff cough (patients with hyperactive airways), end-expiratory cough (patient with secretions in distal airway), or augmented cough (patient with weakened abdominal muscle).
   a. Cascade cough— instruct patient to do the following:
      (1) Take a deep breath, and hold it for 1 to 3 seconds.
      (2) Cough out forcefully several times until all air is exhaled.
      (3) Inhale slowly through the nose.
      (4) Repeat once.
      (5) Rest, and then repeat as necessary.
   b. Huff cough—instruct patient to do the following:
      (1) Take a deep breath, and hold it for 1 to 3 seconds
      (2) Say the word “huff” while coughing out several times until air is exhaled
      (3) Inhale slowly through the nose
      (4) Repeat as necessary
   c. End-expiratory cough—instruct patient to do the following:
(1) Take a deep breath, and hold it for 1 to 3 seconds.

(2) Exhale slowly.

(3) At the end of exhalation, cough once.

(4) Inhale slowly through the nose.

(5) Repeat as necessary, or follow with cascade cough.

d. Augmented cough— instruct patient to do the following:

(1) Take a deep breath, and hold it for 1 to 3 seconds.

(2) Perform one or more of the following maneuvers to increase intraabdominal pressure:

(a) Tighten knees and buttocks.

(b) Bend forward at the waist.

(c) Place a hand flat on the upper abdomen just under the xiphoid process and press in and up abruptly during coughing.

(d) Keep hands on the chest wall and press inward with each cough.

(3) Inhale slowly through the nose.

(4) Rest and repeat as necessary.

9. Suction nasotracheally or endotracheally as necessary to assist with secretion removal.

10. Reposition patient at least every 2 hours or use continuous lateral rotation therapy to mobilize and prevent stasis of secretions.

11. Allow rest periods between coughing sessions, suctioning, or any other demanding activities to promote energy conservation.

Nursing Management Plan

**Ineffective Breathing Pattern**

**Definition:** Inspiration and/or expiration that does not provide adequate ventilation
Ineffective Breathing Pattern Related to Decreased Lung Expansion

**Defining Characteristics**

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- Abnormal respiratory patterns (hypoventilation, hyperventilation, tachypnea, bradypnea, obstructive breathing)
- Abnormal arterial blood gas (ABG) values (increased Paco2, decreased pH)
- Unequal chest movement
- Shortness of breath, dyspnea

**Outcome Criteria**

- Respiratory rate, rhythm, and depth return to baseline.
- Minimal or absent use of accessory muscles.
- Chest expands symmetrically.
- ABG values return to baseline.

**Nursing Interventions and Rationale**

1. Treat pain, if present, to prevent hypoventilation and atelectasis. Implement the nursing management plan of care, Acute Pain Related to Transmission and Perception of Cutaneous, Visceral, Muscular, or Ischemic Impulses.

2. Position patient in high-Fowler’s or semi-Fowler’s position to promote diaphragmatic descent and maximal inhalation.

3. Assist with deep-breathing exercises and incentive spirometry with sustained maximal inspiration 5 to 10 times/hr to help reinflate collapsed portions of the lung.

- Deep breathing—instruct patient to:
  
  a. Sit up straight or lean forward slightly while sitting on edge of bed or chair (if possible).
  
  b. Take in a slow, deep breath.
c. Pause slightly, or hold breath for at least 3 seconds.

d. Exhale slowly.

e. Rest, and repeat.

• Incentive spirometry— instruct patient to:
  
a. Exhale normally.

b. Place lips around the mouthpiece, and close mouth tightly around it.

c. Inhale slowly and as deeply as possible, noting the maximal volume of air inspired.

d. Hold maximal inhalation for 3 seconds.

e. Take the mouthpiece out of mouth, and slowly exhale.

f. Rest, and repeat.

4. Assist physician with intubation and initiation of mechanical ventilation as indicated.

Ineffective Breathing Pattern Related to Musculoskeletal Fatigue or Neuromuscular Impairment

Defining Characteristics

• Unequal chest movement

• Shortness of breath, dyspnea

• Use of accessory muscles

• Tachypnea

• Thoracoabdominal asynchrony

• Abnormal ABG values (increased Paco2, decreased pH)

• Nasal flaring

• Assumption of 3–point position

Outcome Criteria
• Respiratory rate, rhythm, and depth return to baseline.
• Use of accessory muscles is minimal or absent.
• Chest expands symmetrically.
• ABG values return to baseline.

Nursing Interventions and Rationale

1. Prevent unnecessary exertion to limit drain on patient's ventilatory reserve.
2. Instruct patient in energy-saving techniques to conserve patient's ventilatory reserve.
3. Assist with pursed-lip and diaphragmatic breathing techniques to facilitate diaphragmatic descent and improved ventilation.

• Diaphragmatic breathing— instruct the patient to:
  a. Sit in the upright position.
  b. Place one hand on the abdomen just above the waist and the other on the upper chest.
  c. Breathe in through the nose, and feel the lower hand push out; the upper hand should not move.
  d. Breathe out through pursed lips, and feel the lower hand move in.
4. Position patient in high-Fowler's or semi-Fowler's position to promote diaphragmatic descent and maximal inhalation.
5. Assist physician with intubation and initiation of mechanical ventilation as indicated.

Nursing Management Plan

Ineffective Cardiopulmonary Tissue Perfusion

Definition: Decrease in oxygen resulting in the failure to nourish the tissues at the capillary level
Ineffective Cardiopulmonary Tissue Perfusion Related to Decreased Coronary Blood Flow

*Defining Characteristics*

- Angina for more than 30 min
- ST-segment elevation on 12–lead electrocardiogram (ECG)
- Elevated troponin I
- Elevated CK-MB enzymes
- Apprehension
- Shortness of breath

*Outcome Criteria*

- Systolic blood pressure (SBP) is >90 mm Hg.
- Mean arterial pressure (MAP) is >60 mm Hg.
- Heart rate is <100 beats/min.
- Pulmonary artery (PA) pressures are within normal limits or back to baseline.
- Cardiac index (CI) is >2.2 L/min/m2.
- Urine output is >0.5 ml/kg/hr or >30 ml/hr.
- 12–lead ECG is normalized without new Q waves.
- Angina is absent.
- CK-MB enzymes and troponin I levels are within normal range.

*Nursing Interventions and Rationale*

1. Collaborate with the physician regarding the administration of thrombolytic therapy or percutaneous transluminal coronary angioplasty (PTCA) *to restore myocardial blood flow.*

2. Collaborate with the physician regarding the administration of aspirin, anti-platelet therapy and heparin *to prevent recurrent thrombosis and inhibit platelet function.*
3. Collaborate with the physician regarding the administration of beta-blockers *to decrease myocardial oxygen demand and prevent recurrent ischemia.*

4. Collaborate with the physician regarding the administration of angiotensin-converting enzyme (ACE) inhibitors *to block the conversion of angiotensin I to angiotensin II, a potent vasoconstrictor.*

5. Collaborate with physician regarding the administration of sublingual nitroglycerin (NTG) and/or intravenous (IV) NTG infusion *to augment coronary blood flow and reduce cardiac work by decreasing preload and afterload.*

6. Collaborate with physician regarding the administration of morphine *to control pain.*

7. Collaborate with physician regarding the administration of oxygen at 2 L/min to achieve Spo2 >90% *to maximize myocardial oxygen supply.*

8. Maintain the patient on bed rest with bedside commode privileges *to minimize myocardial oxygen demand.*

9. Monitor patient's hemodynamic and cardiac rhythm status:

   a. Select electrocardiographic (ECG) monitoring leads based on infarct location and rhythm to obtain the best rhythm for monitoring.

   b. Evaluate cardiac rhythm for presence of dysrhythmias which are common complications of myocardial ischemia.

   c. Collaborate with physician regarding the administration of antidysrhythmic medications.

   d. Assess serum electrolytes (potassium and magnesium) and arterial blood gases (ABGs).

   e. Collaborate with physician regarding the administration of electrolytes to correct any imbalances.
f. Monitor ST segment continuously to determine changes in myocardial tissue perfusion.

g. Monitor patient’s BP at least every hour as many conditions (drugs, dysrhythmias, myocardial ischemia) may cause hypotension (SBP <90 mm Hg).

h. Treat symptomatic dysrhythmias according to unit’s emergency protocol or Advanced Cardiac Life Support (ACLS) guidelines.

10. Instruct patient to avoid the Valsalva maneuver as forced expiration against a closed glottis causes sudden and intense changes in systolic blood pressure and heart rate.

**Nursing Management Plan**

**Ineffective Cerebral Tissue Perfusion**

**Definition:** Decrease in oxygen resulting in the failure to nourish the tissues at the capillary level

Ineffective Cerebral Tissue Perfusion Related to Decreased Blood Flow

**Defining Characteristics**

- Decreased level of consciousness
- Hemiparesis or hemiplegia
- Visual changes
- Aphasia
- Dysphagia
- Facial droop
- Cognitive deficits
- Ataxia

**Outcome Criteria**

- Absence of neurologic deficits
Blood pressure within ordered parameters

*Nursing Interventions and Rationale*

1. Collaborate with physician regarding the administration of thrombolytic therapy *to facilitate lysis of the clot and restoration of blood flow to affected area.*

2. Monitor the patient for alterations in blood pressure, oxygenation, temperature, rhythm and glucose levels.

3. Collaborate with physician regarding the administration vasodilators for hypertension *to maintain the patient’s blood pressure within desired range.* Use caution in lowering blood pressure *as hypotension decreases cerebral blood flow.*
   
a. Patients receiving thrombolytic therapy—keep systolic blood pressure (SBP) <185 mm Hg and diastolic blood pressure (DPB) <110 mm Hg.
   
b. Patients not receiving thrombolytic therapy—keep SBP <220 mm Hg and DBP <140 mm Hg.

4. Collaborate with physician regarding the administration of intravenous fluids and vasoconstrictors for hypotension *as hypotension decreases cerebral blood flow.*

5. Collaborate with physician regarding the administration of oxygen to maintain Spo2 >95% *to prevent hypoxemia and potential worsening of the neurologic injury.*

6. Collaborate with physician regarding administration of acetaminophen for elevated temperature *as hyperthermia is associated increase morbidity in the stroke patient.*

7. Collaborate with the physician regarding the treatment of dysrhythmias *due to increased sympathetic nervous system stimulation.*

8. Collaborate with the physician regarding the administration of insulin for hyperglycemia *as elevated blood glucose as been linked to an increase the area of infarct.*

9. Collaborate with the speech therapist regarding the patient's ability to swallow before
initiating oral feedings to ensure patient is not at risk for aspirating.

10. Collaborate with the physical therapist to assess the patient's ability to ambulate safely to ensure the patient is not at risk for falling and ability to perform activities of daily living to facilitate discharge home.

11. Maintain surveillance for complications such as increased intracranial pressure, seizures, and acute respiratory failure.

Ineffective Cerebral Tissue Perfusion Related to Hemorrhage

Defining Characteristics

Intracerebral Hemorrhage

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• Alteration in level of consciousness
• Nausea and vomiting
• Headache
• Seizures
• Hypertension
• Focal neurologic deficits

Subarachnoid Hemorrhage

• Sudden onset of severe headache, nausea, and/or vomiting
• Symptoms of meningeal irritation:
• Nuchal rigidity and pain
• Back pain
• Bilateral leg pain
• Kernig's sign: resistance to full extension of the leg at the knee when the hip is flexed
• Brudzinski's sign: flexion of the hip and knee during passive neck flexion
• Photophobia and visual changes
• Sudden loss of consciousness
• Altered level of consciousness
• Seizures
• Focal neurologic deficits

**Outcome Criteria**

• Patient is oriented to time, place, person, and situation.
• Pupils are equal and normoreactive.
• BP is within patient’s norm.
• Motor function is bilaterally equal.
• Headache, nausea, and vomiting are absent.
• Patient verbalizes importance of and displays compliance with reduced activity.

**Nursing Interventions and Rationale**

1. Assess for indicators of increased intracranial pressure (ICP) and brain herniation (see the nursing management plan Decreased Intracranial Adaptive Capacity Related to Failure of Normal Intracranial Compensatory Mechanism).

2. Collaborate with the physician regarding the administration of anticonvulsant medications to prevent the onset of seizures or to control seizures.

3. Collaborate with physician regarding the administration vasodilators for hypertension to avoid further bleeding. Use caution in lowering blood pressure as hypotension decreases cerebral blood flow.

4. Initiate precautions to prevent rebleeding.

   a. Ensure bed rest in a quiet environment to lessen external stimuli.

   b. Maintain a darkened room to lessen symptoms of photophobia.
c. Restrict visitors, and instruct them to keep conversation as nonstressful as possible.

d. Administer prescribed sedatives as prescribed to reduce anxiety to promote rest.

e. Administer analgesics as prescribed to relieve or lessen headache.

f. Provide a soft, high-fiber diet and stool softeners to prevent constipation, which can lead to straining and increased risk of rebleeding.

g. Assist with activities of daily living (feeding, bathing, dressing, toileting).

h. Avoid any activity that could lead to increased ICP; ensure that patient does not flex hips beyond 90 degrees and avoids neck hyperflexion, hyperextension, or lateral hyperrotation that could impede jugular venous return.

Nursing Management Plan

**Ineffective Coping**

**Definition:** Inability to form a valid appraisal of the stressors, inadequate choices of practiced responses, and/or inability to use available resources

Ineffective Coping Related to Situational Crisis and Personal Vulnerability

**Defining Characteristics**

- Verbalization of inability to cope. *Sample statements:* “I can't take this anymore.” “I don't know how to deal with this.”

- Ineffective problem solving (problem lumping). *Sample statements:* “I have to eliminate salt from my diet. They tell me I can no longer mow the lawn. This hospitalization is costing a mint. What about my kids' future? Who's going to change the oil in the car? This is an incredible amount of time away from work.”

- Ineffective use of coping mechanisms
Projection: blames others for illness or pain

Displacement: directs anger and/or aggression toward family. Sample statements: “Get out of here. Leave me alone.” Cursing, shouting, or demanding attention; striking out or throwing objects

Denial: of severity of illness and need for treatment

• Noncompliance. Examples: activity restriction; refusal to allow treatment or to take medications
• Suicidal thoughts (verbalizes desire to end life)
• Self-directed aggression. Examples: disconnects or attempts to disconnect lifesustaining equipment; deliberately tries to harm self

Outcome Criteria

• Patient verbalizes beginning ability to cope with illness, pain, and hospitalization. Sample statements: “I’m trying to do the best I can.” “I want to help myself get better.”
• Patient demonstrates effective problem solving (lists and prioritizes problems from most to least urgent).
• Patient uses effective behavioral strategies to manage the stress of illness and care.
• Patient demonstrates interest or involvement in illness or environment. Examples: patient does the following:

Requests medications when anticipating pain.
—

Questions course of treatment, progress, and prognosis.

—

Asks for clarification of environmental stimuli and events.

—

Seeks out supportive individuals in his or her environment.

—

Uses coping mechanisms and strategies more effectively to manage situational crisis.

—

Demonstrates significant reduction in impulsive, angry, or aggressive outbursts (projection, shouting, cursing) directed toward family.

—

Verbalizes future-based plans, with cessation of self-directed aggressive acts and suicidal thoughts.

—

Willingly complies with treatment regimen.

—

 Begins to participate in self-care.

_Nursing Interventions and Rationale_

1. Actively listen and respond to patient's verbal and behavioral expressions. **Active listening signifies unconditional respect and acceptance for the patient as a worthwhile individual. It builds trust and rapport, guides the nurse toward problem areas, encourages the patient to express concerns, and promotes compliance.**
2. Offer effective coping strategies to help the patient better tolerate the stressors related to his or her illness and care. Give permission to vent feelings in a safe setting. Sample statements: “I don’t blame you for feeling angry or frustrated.” “Others who are ill like you have expressed similar feelings.” “I will listen to anything you want to share with me.” “We don't have to talk; I'd like to sit here with you.” “It's perfectly OK to cry.”

Individuals who are provided with opportunities to express their feelings will be better able to release pent-up emotions and derive a greater sense of relief and comfort. Thus they are less likely to resort to overly impulsive, aggressive acts, which may harm self or others.

3. Inform the family of the patient's need to displace anger occasionally but that you will be working with the patient to help him or her release his or her feelings in a more constructive, effective way. Family members who are well-informed are better equipped to cope with their loved one's emotional anguish and outbursts. They are less likely to waste energy on feelings of guilt, fear, anger, or despair and can use their strength to help the patient in more constructive ways. The knowledge that their loved one is being cared for emotionally, as well as physically, will offer family members a greater sense of comfort and understanding. They will feel nurtured and respected by the nurse's attempt to include them in the process.

4. With the patient, list and number problems from the most to least urgent. Assist him or her in finding immediate solutions for most urgent problems; postpone those that can wait; delegate some to family members; and help him or her to acknowledge problems that are beyond his or her control. Listing and numbering problems in an organized fashion help to break them down into more manageable “pieces” so that the patient is better able to identify solutions for those that are solvable and to
suppress those that are less relevant or not amenable to interventions.

5. Identify individuals in the patient’s environment who best help him or her to cope, as well as those who do not. Validate your observations with the patient. Sample statements: “I notice you seemed more relaxed during your daughter’s visit.” “After the clergy left, you were able to sleep a bit longer than usual; would you like to see him more often?” “Your grandson was a bit upset today; I’ll be glad to talk to him if you like.”

Supportive persons can invoke a calming effect on the patient’s physiologic and psychologic states. Conversely, well-meaning but nonsupportive individuals can have a deleterious effect on the patient’s ability to cope and must be carefully screened and counseled by the nurse.

6. Teach the patient effective cognitive strategies to help him or her better manage the stress of critical illness and care. Help him or her construct pleasant thoughts, situations, or images that can simultaneously inhibit unpleasant realities. Examples: a day at the beach, a walk in the park, drinking a glass of wine, or being with a loved one.

Pleasant thoughts and images constructed during critical illness and care tend to inhibit or reduce the intensity of the unpleasant, stressful effects of the experience.

7. Assist the patient in using coping mechanisms more effectively so he or she can better manage his or her situational crisis.

• Suppression of problems beyond his or her control

• Compensation for illness and its effects; focusing on his or her strengths, interests, family, and spiritual beliefs

• Adaptive displacement of anger, fear, or frustration through healthy, verbal expressions to staff. Effective use of coping mechanisms helps to assuage the patient’s painful feelings in a safe setting. Thus the patient is
strengthened and need not resort to the use of more ineffective defenses to eliminate anxiety.

8. Initiate a suicidal assessment if the patient verbalizes the desire to die, states that life is not worth living, or exhibits self-directed aggression. Sample statement: “We know that this is a bad time for you. You're saying repeatedly that you want to die. Are you planning to harm yourself?” If the response is “yes,” remain with the patient, alert staff members, and provide for psychiatric consultation as soon as possible. Continue to express concern to the patient and protect him or her from harm. Suicidal thoughts as a result of ineffective coping or exhaustion of coping devices are not an uncommon occurrence in critically ill patients. If the mood state is distressing enough, a patient may seek relief by attempting a self-destructive act. Although the patient may not imminently have the energy to succeed in his or her attempt, voicing a specific plan signifies a depressed mood state and depletion of coping strategies. Thus immediate intervention is needed, since the attempt may be successful when the patient’s energy is restored.

9. Encourage the patient to participate in self-care activities and treatment regimen in accordance with his or her level of progress. Offer praise for his or her efforts toward self-care. Patients who take an active role in their own treatment and progress are less apt to feel like helpless or powerless victims. This greater sense of control over their illness and environment will guide them more swiftly toward becoming as independent as possible.

Nursing Management Plan

**Ineffective Gastrointestinal Tissue Perfusion**

**Definition:** Decrease in oxygen resulting in the failure to nourish the tissues at the capillary
Ineffective Gastrointestinal Tissue Perfusion Related to Decreased Gastrointestinal Blood Flow

Defining Characteristics

• Abdominal pain
• Melena
• Abdominal distention
• Hyperactive to absent bowel sounds range from hyperactive to absent
• Guarding
• Fever
• Hypotension
• Tachycardia
• Altered mental status
• Urine output <30 ml/hr

Outcome Criteria

• Normal bowel sounds
• Absence of abdominal pain, distention, and guarding
• Urinary output is >30 ml/hr.
• Vital signs at baseline
• Normal mentation

Nursing Interventions and Rationales

1. Collaborate with physician regarding the administration of crystalloids, colloids, blood, and blood products to maintain adequate circulating volume. Implement the nursing management plan, Deficit Fluid Volume Related to Absolute Loss.
2. Collaborate with physician regarding pain management. Implement the nursing management plan, Acute Pain Related to Transmission and Perception of Cutaneous, Visceral, Muscular, or Ischemic Impulses.

3. Collaborate with physician regarding the administration of oxygen to maintain Spo2 >92% to prevent hypoxemia and potential worsening of the gastrointestinal injury.

4. Collaborate with physician regarding the administration of electrolyte replacement therapy to maintain adequate electrolyte balance.

5. Collaborate with dietitian regarding administration of nutrition as patient will be unable to eat. Implement the nursing management plan, Imbalanced Nutrition: Less Than Body Requirements.

6. Maintain surveillance for complications such as gastrointestinal hemorrhage, hypovolemic shock, and septic shock.

7. Collaborate with physician regarding preparation for surgery to remove infarcted bowel.

Nursing Management Plan

Ineffective Peripheral Tissue Perfusion

Definition: Decrease in oxygen resulting in the failure to nourish the tissues at the capillary level

Ineffective Cerebral Tissue Perfusion Related to Decreased Peripheral Blood Flow

Defining Characteristics

- Weak and/or unequal peripheral pulses
- Delayed capillary refill
- Ischemic pain from extremity
• Cool skin on extremity
• Pale extremity
• Paresthesias from extremity

Outcome Criteria
• Peripheral pulses are full and equal bilaterally.
• Capillary refill is equal bilaterally.
• Ischemic pain is absent.
• Skin temperature is equal in both extremities.

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• Skin is pink and warm in both extremities.
• Paresthesias are absent.

Nursing Interventions and Rationale
1. Collaborate with physician regarding the administration of antiplatelet, anticoagulant, and/or thrombolytic therapy.

2. Collaborate with physician regarding pain management. Implement the nursing management plan of care, Acute Pain Related to Transmission and Perception of Cutaneous, Visceral, Muscular, or Ischemic Impulses.

3. Ensure patient is adequately hydrated to decrease blood viscosity.

4. Maintain affected extremity in dependent position if possible to enhance blood flow.

5. Keep affected extremity warm and protect it from injury. Do not apply heat directly to the affected extremity as this can result in injury.

6. Maintain surveillance for pain, pallor, pulselessness, paresthesia, paralysis, and poikilothermia as indicators of abrupt change in blood flow.

7. Maintain surveillance for tissue breakdown and arterial ulcers as indicators of injury.

8. Prepare patient for possible surgery or interventional procedure to restore blood flow.
Nursing Management Plan

**Ineffective Renal Tissue Perfusion**

**Definition:** Decrease in oxygen resulting in the failure to nourish the tissues at the capillary level

Ineffective Renal Tissue Perfusion Related to Decreased Renal Blood Flow

**Defining Characteristics**

- Anuria or oliguria
- Decreased urinary creatinine clearance
- Increased serum creatinine
- Increased blood urea nitrogen (BUN)
- Electrolyte abnormalities: potassium, sodium
- Increased MAP, pulmonary artery occlusion pressure (PAOP), pulmonary artery diastolic (PAD) pressure, central venous pressure (CVP) secondary to fluid overload
- Sinus tachycardia
- Metabolic acidosis
- Crackles on lung auscultation
- Engorged neck veins
- Fluid weight gain
- Pitting edema
- Mental status changes
- Anemia

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**Outcome Criteria**

- CO is >4.0 L/min.
- Cl is >2.2 L/min/m².
• MAP, PAOP, PAD, and CVP are within normal limits for patient.
• Electrolytes are within normal range.
• Serum creatinine and BUN are within normal range.
• Normal acid-base balance.
• Level of consciousness is normal.
• Lungs are clear on auscultation.
• Urinary output is within normal limits, or patient is stable on dialysis.
• Hemoglobin and hematocrit values are stable.

*Nursing Interventions and Rationale*

1. Monitor intake and output, urine output, and patient weight.
2. Collaborate with physician regarding the administration of crystalloids, colloids, blood, and blood products to increase circulating volume and maintain MAP >70 mm Hg.
3. Collaborate with physician regarding the administration of inotropes to enhance myocardial contractility and increase CI to >2.5 L /min.
4. Collaborate with physician regarding the administration of diuretics to the oliguric patient to flush out cellular debris and increase urine output.
5. Minimize the patient's exposure to nephrotoxic drugs to decrease damage to kidneys.
6. Monitor blood levels of drugs cleared by kidneys to avoid accumulation.
7. Monitor patient for signs of electrolyte imbalance due to impaired electrolyte regulation.
8. Maintain surveillance for signs and symptoms of fluid overload.
9. Monitor patient's clinical status and response to dialysis therapy to ensure the patient is receiving safe and effective dialytic therapy.

*Nursing Management Plan*
**Powerlessness**

**Definition:** Perception that one's own action will not significantly affect an outcome; a perceived lack of control over a current situation or immediate happening

Powerlessness Related to Lack of Control Over Current Situation and/or Disease Progression

**Defining Characteristics**

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**Severe**

- Verbal expressions of having no control or influence over situation
- Verbal expressions of having no control or influence over outcome
- Verbal expressions of having no control over self-care
- Depression over physical deterioration that occurs despite patient's compliance with regimens
- Apathy

**Moderate**

- Nonparticipation in care or decision making when opportunities are provided
- Expressions of dissatisfaction and frustration about inability to perform previous tasks and/or activities
- Lack of progress monitoring
- Expressions of doubt about role performance
- Reluctance to express true feelings, fearing alienation from caregivers
- Passivity
- Inability to seek information about care
- Dependence on others that may result in irritability, resentment, anger, and guilt
- No defense of self-care practices when challenged
Low

- Passivity

*Outcome Criteria*

- Patient verbalizes increased control over situation by wanting to do things his or her way.
- Patient actively participates in planning care.
- Patient requests needed information.
- Patient chooses to participate in self-care activities.
- Patient monitors progress.

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*Nursing Interventions and Rationale*

1. Evaluate the patient's feelings and perception of the reasons for lack of power and sense of helplessness.

2. Determine as far as possible the patient's usual response to limited control situations.

Determine through ongoing assessment the patient's usual locus of control (i.e., believes that influence over his or her life is exerted by luck, fate, powerful persons [external locus of control] or that influence is exerted through personal choices, self-effort, self-determination [internal locus of control]).

3. Support patient's physical control of the environment by involving him or her in care activities; knock before entering room if appropriate; ask permission before moving personal belongings. Inform the patient that, although an activity may not be to his or her liking, it is necessary. *This gives the patient permission to express dissatisfaction with the environment and the regimen.*

4. Personalize the patient's care using his or her preferred name. *This supports the patient's psychologic control.*
5. Provide therapeutic rationale for all the patient is asked to do for himself or herself and for all that is being done for and with him or her. Reinforce the physician's explanations; clarify misconceptions about the illness situation and treatment plans. This supports the patient's cognitive control.

6. Include the patient in care planning by encouraging participation and allowing choices wherever possible (e.g., timing of personal care activities; deciding when pain medicines are needed). Point out situations in which no choices exist.

7. Provide opportunities for the patient to exert influence over himself or herself and his or her body, thereby affecting an outcome. For example, share with the patient the nurse's assessment of his or her breath sounds and explain that they can be improved by self-initiated deep-breathing exercises. Feedback that the patient has been successful in helping clear his or her lungs reinforces the influence he or she does retain.

8. Encourage family to permit patient to do as much independently as possible to foster perception of personal power.

9. Assist the patient to establish realistic short-term and long-term goals. Setting unrealistic or unattainable goals inadvertently reinforces the patient's perception of powerlessness.

10. Document care to provide for continuity so that the patient can maintain appropriate control over the environment.

11. Assist the patient to regain strength and activity tolerance as appropriate, thus increasing a sense of control and self-reliance.

12. Increase the sensitivity of the health team members and significant others to the patient's sense of powerlessness. Use power over the patient carefully. Use the words “must,” “should,” and “have to” with caution because they communicate coercive powers and imply that the objects of “musts” and “shoulds” are of benefit to the
nurse versus the patient.

13. Plan with the patient for transfer from the critical care unit to the intermediate unit and eventually to home.

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Nursing Management Plan

Risk for Aspiration

Definition: At risk for entry of gastrointestinal secretions, oropharyngeal secretions, solids, or fluids into tracheobronchial passages

Risk Factors

• Impaired laryngeal sensation or reflex
• Reduced level of consciousness
• Extubation
• Impaired pharyngeal peristalsis or tongue function

—

Neuromuscular dysfunction

—

Central nervous system dysfunction

—

Head or neck injury

• Impaired laryngeal closure or elevation

—

Laryngeal nerve dysfunction

—

Artificial airways

—
Gastrointestinal tubes

- Increased gastric volume
  
- Delayed gastric emptying
  
- Enteral feedings
  
- Medication administration
  
- Increased intragastric pressure
  
- Upper abdominal surgery
  
- Obesity
  
- Pregnancy
  
- Ascites
  
- Decreased lower esophageal sphincter pressure
  
- Increased gastric acidity
  
- Gastrointestinal tubes
  
- Decreased antegrade esophageal propulsion
  
- Trendelenburg or supine position
Esophageal dysmotility

Esophageal structural defects or lesions

Outcome Criteria

• Breath sounds are normal, or there is no change in patient's baseline breath sounds.

• Arterial blood gas (ABG) values remain within patient's baseline.

• There is no evidence of gastric contents in lung secretions.

Nursing Interventions and Rationale

1. Assess gastrointestinal function to rule out hypoactive peristalsis and abdominal distention.

2. Position patient with head of bed elevated 30 degrees to prevent gastric reflux through gravity. If head elevation is contraindicated, position patient in right lateral decubitus position to facilitate passage of gastric contents across the pylorus.

3. Maintain patency and functioning of nasogastric suction apparatus to prevent accumulation of gastric contents.

4. Provide frequent and scrupulous mouth care to prevent colonization of the oropharynx with bacteria and inoculation of the lower airways.

5. Ensure that endotracheal/tracheostomy cuff is properly inflated to limit aspiration of oropharyngeal secretions.

6. Treat nausea promptly; collaborate with physician on an order for antiemetic to prevent vomiting and resultant aspiration.

Additional Interventions for Patient Receiving Continuous or Intermittent Enteral Tube Feedings

7. Position patient with head of bed elevated 45 degrees to prevent gastric reflux. If a
head-down position becomes necessary at any time, interrupt the feeding 30 minutes before the position change.

8. Check placement of feeding tube either by auscultation or radiographically at regular intervals (e.g., before administering intermittent feedings and after position changes, suctioning, coughing episodes, or vomiting) to ensure proper placement of the tube.

9. Monitor patient for signs of delayed gastric emptying to decrease potential for vomiting and aspiration.

a. For large-bore tubes, check residuals of tube feedings before intermittent feedings and every 4 hours during continuous feedings. Consider withholding feedings for residuals greater than 150% of the hourly rate (continuous feeding) or greater than 50% of the previous feeding (intermittent feeding).

b. For small-bore tubes, observe abdomen for distention, palpate abdomen for hardness or tautness, and auscultate abdomen for bowel sounds.

Nursing Management Plan

Risk for Infection

Definition: At increased risk for being invaded by pathogenic organisms

Risk Factors

- Inadequate primary defenses (broken skin, traumatized tissue, decreased ciliary action, stasis of body fluids, change in pH secretions, altered peristalsis)
- Inadequate secondary defenses (decreased hemoglobin, leukopenia, suppressed inflammatory/immune response)
- Immunocompromise
- Inadequate acquired immunity
- Tissue destruction and increased environmental exposure
- Chronic disease
- Invasive procedures
- Malnutrition
- Pharmacologic agents (antibiotics, steroids)

Outcome Criteria
- Total lymphocyte count is >1000/mm3.
- White blood cell count is within normal limits.
- Temperature is within normal limits.
- Blood, urine, wound, and sputum cultures are negative.

Nursing Interventions and Rationale
1. Perform proper hand hygiene before and after patient care to reduce the transmission of microorganisms.
2. Use aseptic technique for insertion and manipulation of invasive monitoring devices, intravenous (IV) lines, and urinary drainage catheters to maintain sterility of environment.
3. Stabilize all invasive lines and catheters to avoid unintentional manipulation and contamination.
4. Use aseptic technique for dressing changes to prevent contamination of wounds or insertion sites.
5. Change any line placed under emergent conditions within 24 hours because aseptic technique is usually breached during an emergency.
6. Collaborate with the physician to change any dressing that is saturated with blood or drainage because these are mediums for microorganism growth.
7. Minimize use of stopcocks and maintain caps on all stopcock ports to reduce the
ports of entry for microorganisms.

8. Avoid the use of nasogastric tubes, nasoendotracheal tubes, and nasopharyngeal suctioning in the patient with a suspected cerebrospinal fluid leak to decrease the incidence of central nervous system infection.

9. Change ventilator circuits with humidifiers no more often than every 48 hours to avoid introducing microorganisms into the system.

10. Provide the patient with a clean manual resuscitation bag to avoid crosscontamination between patients.

11. Provide meticulous mouth care at least every 4 hours and suction oropharyngeal subglottic secretions (in patients with artificial airways) to avoid accumulation.

12. Cleanse in-line suction catheters with sterile saline according to the manufacturer's instructions to avoid accumulation of secretions within the catheter.

13. Maintain the head of the bed elevated at 30 to 45 degrees in patient artificial airways to decrease the incidence of aspiration.

14. Use disposable sterile scissors, forceps, and hemostats to reduce the transmission of microorganisms.

15. Maintain a closed urinary drainage system to decrease incidence of urinary infections.

16. Keep the urinary drainage tubing and bag below the level of the patient's bladder to prevent the backflow of urine.

17. Assess the urinary drainage tubing for kinks to prevent stasis of urine.

18. Protect all access device sites from potential sources of contamination (nasogastric reflux, draining wounds, ostomies, sputum).

19. Refrigerate parenteral nutrition solutions and opened enteral nutrition formulas to inhibit bacterial growth.
20. Maintain daily surveillance of invasive devices for signs and symptoms of infection.

21. Notify physician of elevated temperature or if any signs or symptoms of infection are present.

Additional Interventions for Patient Receiving Immunosuppressive Drugs

22. Obtain blood, urine, and sputum cultures for temperature elevations >38° C (100.4° F) inasmuch as elevation likely is caused by bacteremia or bladder or pulmonary infection.

23. Auscultate breath sounds at least every 6 hours. Pulmonary infection is the most common type of infection, and changes in breath sounds might be an early indication.

24. Inspect wounds at least every 8 hours for redness, swelling, and/or drainage, which may indicate infection.

25. Inspect overall skin integrity and oral mucosa for signs of breakdown, which place the patient at risk for infection.

26. Notify physician of new-onset cough. Even a nonproductive cough may indicate pulmonary infection.

27. Monitor white blood cell count daily, and report leukocytosis or sudden development of leukopenia, which may indicate an infectious process.

28. Protect patient from exposure to any staff or family member with contagious lesion (e.g., herpes simplex) or respiratory infections.

29. Collaborate with dietitian regarding the patient's nutritional status and need for augmentation of nutritional intake as necessary to prevent debilitation and increased susceptibility to infection.

30. Collaborate with physician to remove invasive lines and catheters as soon as possible to decrease potential portals of entry.
31. Teach patient the clinical manifestations of infection. A knowledgeable patient will seek medical attention promptly, which will result in earlier treatment and a decreased risk that infection will become life-threatening.

Nursing Management Plan

**Situational Low Self-Esteem**

**Definition:** Development of a negative perception of self-worth in response to a current situation

Situational Low Self-Esteem Related to Feelings of Guilt About Physical Deterioration

**Defining Characteristics**

- Inability to accept positive reinforcement
- Lack of follow-through
- Nonparticipation in therapy
- Not taking responsibility for self-care (i.e., self-neglect)
- Self-destructive behavior
- Lack of eye contact

**Outcome Criteria**

- Patient verbalizes feelings of self-worth.
- Patient maintains positive relationships with significant others.
- Patient manifests active interest in appearance by completing personal grooming daily.

**Nursing Interventions and Rationale**

1. Evaluate the meaning of health-related situation. How does the patient feel about himself or herself, the diagnosis, and the treatment? How does the present fit into the larger context of his or her life?
2. Assess the patient’s emotional level, interpersonal relationships, and feeling about himself or herself. Recognize the patient's uniqueness (how the hair is worn, preference for name used).

3. Help the patient discover and verbalize feelings and understand the crisis by listening and providing information.

4. Assist the patient to identify strengths and positive qualities that increase the sense of self-worth. Focus on past experiences of accomplishment and competency. Help the patient with positive self-reinforcement. Reinforce the obvious love and affection of family and significant others.

5. Assess coping techniques that have been helpful in the past. Help the patient decide how to handle negative or incongruent feedback about the situation.

6. Encourage visits from family and significant others. Facilitate interactions, and ensure privacy. Help family members entering the critical care unit by explaining what they will see. Increase visitors' comfort with equipment; offer chairs and other courtesies.

7. Encourage the patient to pursue interest in individual or social activities, even though difficult in the critical care unit.

8. Reflect caring, concern, empathy, respect, and unconditional acceptance in nurse/patient relationships.

9. Remember that for the patient the nurse is a significant other who provides important appraisals of the patient and who can facilitate the change process.


11. Provide for continuity of nurse assignment to ensure consistent contacts that can 

facilitate support of the patient's self-esteem.

Nursing Management Plan
**Unilateral Neglect**

**Definition:** Lack of awareness and attention to one side of the body

Unilateral Neglect Related to Perceptual Disruption

*Defining Characteristics*

- Neglect of involved body parts and/or extrapersonal space
- Denial of existence of the affected limb or side of body
- Denial of hemiplegia or other motor and sensory deficits
- Left homonymous hemianopia
- Difficulty with spatial-perceptual tasks
- Left hemiplegia

*Outcome Criteria*

- Patient is safe and free from injury.
- Patient is able to identify safety hazards in the environment.
- Patient recognizes disability and describes physical deficits present (e.g., paralysis, weakness, numbness).

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- Patient demonstrates ability to scan the visual field to compensate for loss of function or sensation in affected limb(s).

*Nursing Interventions and Rationale*

1. Adapt environment to patient's deficits to maintain patient safety.

- Position the patient's bed with the unaffected side facing the door.
- Approach and speak to the patient from the unaffected side. If the patient must be approached from the affected side, announce your presence as soon as entering the room to avoid startling the patient.

- Position the call light, bedside stand, and personal items on the patient's
unaffected side.

- If the patient will be assisted out of bed, simplify the environment to eliminate hazards by removing unnecessary furniture and equipment.
- Provide frequent reorientation of the patient to the environment.
- Observe the patient closely, and anticipate his or her needs. In spite of repeated explanation, the patient may have difficulty retaining information about the deficits.
- When patient is in bed, elevate his or her affected arm on a pillow to prevent dependent edema and support the hand in a position of function.

2. Assist the patient to recognize the perceptual defect.

- Encourage the patient to wear any prescriptive corrective glasses or hearing aids to facilitate communication.
- Instruct the patient to turn the head past midline to view the environment on the affected side.
- Encourage patient to look at the affected side and to stroke the limbs with the unaffected hand. Encourage handling of the affected limbs to reinforce awareness of the affected side.
- Instruct the patient to look for the affected extremity when performing simple tasks to know where it is at all times.
- After pointing to them, have the patient name the affected parts.
- Encourage the patient to use self-exercises (e.g., lifting the affected arm with the unaffected hand).
- If the patient is unable to discriminate between the concepts of “right” and “left,” use descriptive adjectives such as “the weak arm,” “the affected leg,” or “the good arm” to refer to the body. Use gestures, not just words, to indicate right and
3. Collaborate with the patient, physician, and rehabilitation team to design and implement a beginning rehabilitation program for use during the critical care unit stay.

- Use adaptive equipment (braces, splints, slings) as appropriate.
- Teach the patient the individual components of any activity separately, and then proceed to integrate the component parts into a completed activity.
- Instruct the patient to attend to the affected side, if able, and to assist with the bath or other tasks.
- Use tactile stimulation to reintroduce the arm or leg to the patient. Rub the affected parts with different textured materials to stimulate sensations (warm, cold, rough, soft).

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- Encourage activities that require the patient to turn the head toward the affected side, and retrain the patient to scan the affected side and environment visually.
- If the patient is allowed out of bed, cue him or her with reminders to scan visually when ambulating. Assist and remain in constant attendance because the patient may have difficulty maintaining correct posture, balance, and locomotion. There may be vertical-horizontal perceptual problems, with the patient leaning to the affected side to align with the perceived vertical. Provide sitting, standing, and balancing exercises before getting the patient out of bed.
- Assist patient with oral feedings.
  a. Avoid giving patient any very hot food items that could cause injury.
  b. Place the patient in an upright sitting position if possible.
  c. Encourage the patient to feed himself or herself; if necessary, guide the
patient's hand to the mouth.

d. If the patient is able to feed himself or herself, place one dish at a time in front of the patient. When the patient is finished with the first, add another dish. Tell the patient what he or she is eating.

e. Initially place food in patient's visual field; then gradually move the food out of the field of vision and teach the patient to scan the entire visual field.

f. When the patient has learned to visually scan the environment, offer a tray of food with various dishes.

g. Instruct the patient to take small bites of food and to place the food in the unaffected side of the mouth.

h. Teach the patient to sweep out pockets of food with the tongue after every bite to eliminate retained food in the affected side of the mouth.

i. After meals or oral medications, check the patient's oral cavity for pockets of retained material.

4. Initiate patient and family health teaching.
   • Assess to ensure that both the patient and the family understand the nature of the neurologic deficits and the purpose of the rehabilitation plan.
   • Teach the proper application and use of any adaptive equipment.
   • Teach the importance of maintaining a safe environment, and point out potential environmental hazards.
   • Instruct family members how to facilitate relearning techniques (e.g., cueing, scanning visual fields).