BURNS: THERMAL/CHEMICAL/ELECTRICAL (ACUTE AND CONVALESCENT PHASES)

Each year, more than 2 million burn injuries occur in the United States; approximately 100,000 people require hospital care. Thermal burns, which are the most common type, occur because of fires, motor vehicle crashes, home fires, hot liquid spills, electrical malfunctions, and war. Survival rates have risen because of newer treatments and skin barrier development; however, moderate and severe burns account for many dollars spent on physical and psychological rehabilitation.

Thermal burns: Injuring agent can be flame, hot liquid, or contact with hot object. Flame burns are associated with smoke/inhalation injury.

Chemical burns: Occur from type/content of injuring agent, as well as concentration and temperature of agent.

Electrical burns: Occur from type/voltage of current that generates heat in proportion to resistance offered and travels the pathway of least resistance (i.e., nerves offer the least resistance and bones the greatest resistance). Underlying injury is more severe than visible injury.

Superficial partial-thickness (first-degree) burns: Involve only the epidermis. Wounds appear bright pink to red with minimal edema and no blisters. The skin is often warm/dry.

Moderate partial-thickness (second-degree) burns: Involve the epidermis and dermis. Wounds appear red to pink with moderate edema and moist, weeping blisters.

Deep partial-thickness (second-degree) burns: Involve the deep dermis. Wounds appear pink to pale ivory with moderate edema and blisters. These wounds are dryer than moderate partial-thickness burns.

Full-thickness (third-degree) burns: Involve all layers of skin, subcutaneous fat, and may involve the muscle, nerves, and blood supply. Wound appearance varies from white to cherry red to brown or black, with blistering uncommon. These wounds have a dry, leathery texture.

Full-thickness (fourth-degree) burns: Involve all skin layers plus muscle, organ tissue, and bone. Charring occurs.

CARE SETTING

The following adult patients are admitted for acute care and during the rehabilitation phase may be cared for in a subacute or rehabilitation unit: those with partial-thickness burns more than 15% total body surface area (TBSA) or whose age is considered high risk (older than 65 years of age); full-thickness burns more than 2% of TBSA; burns of face, both hands, perineum, or both feet; or inhalation and all electrical burns.

RELATED CONCERNS

Disaster considerations
Fluid and electrolyte imbalances
Metabolic acidosis (primary base bicarbonate deficiency)
Psychosocial aspects of care
Respiratory acidosis (primary carbonic acid excess)
Sepsis/septicemia
Surgical intervention
Total nutritional support: parenteral/enteral feeding
Upper gastrointestinal/esophageal bleeding

Patient Assessment Database

Data depend on type, severity, and body surface area involved.

ACTIVITY/REST

May exhibit:	Decreased strength, endurance Limited range of motion (ROM) of involved areas Impaired muscle mass, altered tone

CIRCULATION

May exhibit	Hypotension (shock)
(with burn injury involving more	Peripheral pulses diminished distal to extremity injury; generalized peripheral vasoconstriction with loss of pulses, mottling of skin, and coolness (electrical shock)

than 20% TBSA): Tachycardia (shock/anxiety/pain)
Dysrhythmias (electrical shock)
Tissue edema formation (all burns)

EGO INTEGRITY

May report: Feeling scared, self-conscious, conspicuous, angry, embarrassed, different
Concerns about family, job, finances, disfigurement

May exhibit: Anxiety, crying, dependency, denial, withdrawal, hostility, aggressive behavior

ELIMINATION

May exhibit: Urinary output decreased/absent during emergent phase; color may be pink (hemochromogens from damaged red blood cells [RBCs]) or reddish black if myoglobin present, indicating deep-muscle damage
Diuresis (after capillary leak sealed and fluids mobilized back into circulation)
Bowel sounds decreased/absent, especially in cutaneous burns of more than 20%, because stress reduces gastric motility/peristalsis

FOOD/FLUID

May exhibit: Generalized tissue edema (swelling is rapid and may be extreme in early hours after injury)
Anorexia, nausea/vomiting

NEUROSENSORY

May report: Mixed areas of numbness, tingling, burning pain
Changes in vision, decreased visual acuity (electrical shock)

May exhibit: Changes in orientation, affect, behavior
Decreased deep tendon reflexes (DTRs), reflexes and sensation in injured extremities
Seizure activity (electrical shock)
Corneal lacerations, retinal damage (electrical shock)
Rupture of tympanic membrane (electrical shock)
Paralysis (electrical injury to nerve pathways)

PAIN/DISCOMFORT

May report: Pain varies, e.g., first-degree burns are extremely sensitive to touch, pressure, air movement, and temperature changes; second-degree moderate-thickness burns are very painful, whereas pain response in second-degree deep-thickness burns depends on intactness of nerve endings; third-degree burns are painless

RESPIRATION

May report: Confinement in a closed space, prolonged exposure (possibility of inhalation injury)

May exhibit: Hoarseness, wheezy cough, carbonaceous particles on face/in sputum, drooling/inability to swallow oral secretions, and cyanosis (indicative of inhalation injury)
Thoracic excursion may be limited in presence of circumferential chest burns
Upper airway stridor/wheezes (obstruction due to laryngospasm, laryngeal edema)
Breath sounds: Crackles (pulmonary edema), stridor (laryngeal edema), profuse airway secretions/ wheezing (rhonchi)

SAFETY

May exhibit: **Skin:**
General: Exact depth of tissue destruction may not be evident for 3–5 days because of the process of microvascular thrombosis in some wounds; unburned skin areas may be cool/clammy, pale, with slow capillary refill in the presence of decreasedcardiac output as a result of fluid loss/ shock state
Flame injury: There may be areas of mixed depth of injury because of varied intensity of heat produced by burning clothing; singed nasal hairs; dry, red mucosa of nose and mouth; blisters on posterior pharynx, circumoral and/or circumnasal edema

Chemical injury: Wound appearance varies according to causative agent; skin may be yellowish brown with soft leather-like texture; blisters, ulcers, necrosis, or thick eschar. (Injuries are generally deeper than they appear cutaneously, and tissue destruction can continue for up to 72 hr after injury.)

Electrical injury: The external cutaneous injury is usually much less than the underlying necrosis; appearance of wounds varies and may include entry/exit (explosive) wounds of current, arc burns from current moving in close proximity to body, and thermal burns due to ignition of clothing

Other: Presence of fractures/dislocations (concurrent falls, motor vehicle accident; tetanic muscle contractions due to electrical shock)

TEACHING/LEARNING

Discharge plan considerations:

DRG projected mean length of inpatient stay: dependent on burn percentage and specific surgical procedure(s) required

May require assistance with treatments, wound care/supplies, self-care activities, homemaker/maintenance tasks, transportation, finances, vocational counseling

Changes in physical layout of home or living facility other than home during prolonged rehabilitation

Refer to section at end of plan for postdischarge considerations.

DIAGNOSTIC STUDIES

Complete blood count (CBC): Initial increased hematocrit (Hct) suggests hemoconcentration due to fluid shift/loss. Later decreased Hct and RBCs may occur because of heat damage to vascular endothelium. Leukocytosis (decreased white blood cells [WBCs]) can occur because of loss of cells at wound site and inflammatory response to injury.

Arterial blood gases (ABGs): Baseline especially important with suspicion of inhalation injury. Reduced Pao_2/increased $Paco_2$ may be seen with carbon monoxide retention. Acidosis may occur because of reduced renal function and loss of compensatory respiratory mechanisms.

Carboxyhemoglobin (COHb): Elevation of more than 15% indicates carbon monoxide poisoning/inhalation injury.

Serum electrolytes: Potassium level may be initially elevated because of injured tissues/RBC destruction and decreased renal function; hypokalemia can occur when diuresis starts; magnesium level may be decreased. Sodium level may initially be decreased with body water losses; hypernatremia can occur later as renal conservation occurs.

Alkaline phosphatase: Elevated because of interstitial fluid shifts/impairment of sodium pump.

Serum glucose: Elevation reflects stress response.

Serum albumin: Albumin/globulin ratio may be reversed as a result of loss of protein in edema fluid.

Blood urea nitrogen (BUN)/creatinine (Cr): Elevation reflects decreased renal perfusion/function; however, Cr level can elevate because of tissue injury.

Urine: Presence of albumin, hemoglobin (Hb), and myoglobin indicates deep-tissue damage and protein loss (especially seen with serious electrical burns). Reddish-black color of urine is due to presence of myoglobin.

Random urine sodium: More than 20 mEq/L indicates excessive fluid resuscitation; less than 10 mEq/L suggests inadequate fluid resuscitation.

Wound cultures: May be obtained for baseline data and repeated periodically.

Chest x-ray: May appear normal in early postburn period even with inhalation injury; however, a true inhalation injury presents as infiltrates, often progressing to whiteout on x-ray (adult respiratory distress syndrome [ARDS]).

Fiberoptic bronchoscopy: Useful in diagnosing extent of inhalation injury; findings can include edema, hemorrhage, and/or ulceration of upper respiratory tract.

Flow volume loop: Provides noninvasive assessment of effects/extent of inhalation injury.

Lung scan: May be done to determine extent of inhalation injury.

Electrocardiogram (ECG): Signs of myocardial ischemia/dysrhythmias may occur with electrical burns.

Photographs of burns: Provide documentation of burn-wound and comparative baseline to evaluate healing.

NURSING PRIORITIES

1. Maintain patent airway/respiratory function.
2. Restore hemodynamic stability/circulating volume.
3. Alleviate pain.
4. Prevent complications.

5. Provide emotional support for patient/significant other (SO).
6. Provide information about condition, prognosis, and treatment.

DISCHARGE GOALS

1. Homeostasis achieved.
2. Pain controlled/reduced.
3. Complications prevented/minimized.
4. Dealing with current situation realistically.
5. Condition/prognosis and therapeutic regimen understood.
6. Plan in place to meet needs after discharge.

NURSING DIAGNOSIS: Airway Clearance, risk for ineffective

Risk factors may include

Tracheobronchial obstruction: mucosal edema and loss of ciliary action (smoke inhalation); circumferential full-thickness burns of the neck, thorax, and chest, with compression of the airway or limited chest excursion
Trauma: direct upper-airway injury by flame, steam, hot air, and chemicals/gases
Fluid shifts, pulmonary edema, decreased lung compliance

Possibly evidenced by

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

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Respiratory Status: Airway Patency (NOC)

Demonstrate clear breath sounds, respiratory rate within normal range, be free of dyspnea/cyanosis.

ACTIONS/INTERVENTIONS	RATIONALE
Respiratory Monitoring (NIC)	
Independent	
Obtain history of injury. Note presence of preexisting respiratory conditions, history of smoking.	Causative burning agent, duration of exposure, and occurrence in closed or open space predict probability of inhalation injury. Type of material burned (wood, plastic, wool, and so forth) suggests type of toxic gas exposure. Preexisting conditions increase the risk of respiratory complications.
Assess gag/swallow reflexes; note drooling, inability to swallow, hoarseness, wheezy cough.	Suggestive of inhalation injury.
Monitor respiratory rate, rhythm, depth; note presence of pallor/cyanosis and carbonaceous or pink-tinged sputum.	Tachypnea, use of accessory muscles, presence of cyanosis, and changes in sputum suggest developing respiratory distress/pulmonary edema and need for medical intervention.
Auscultate lungs, noting stridor, wheezing/crackles, diminished breath sounds, brassy cough.	Airway obstruction/respiratory distress can occur very quickly or may be delayed, e.g., up to 48 hr after burn.
Note presence of pallor or cherry-red color of unburned skin.	Suggests presence of hypoxemia or carbon monoxide.
Investigate changes in behavior/mentation, e.g., restlessness, agitation, confusion.	Although often related to pain, changes in consciousness may reflect developing/worsening hypoxia.

ACTIONS/INTERVENTIONS	RATIONALE
Respiratory Monitoring (NIC)	
Independent	
Monitor 24-hr fluid balance, noting variations/changes.	Fluid shifts or excess fluid replacement increases risk of pulmonary edema. *Note:* Inhalation injury increases fluid demands as much as 35% or more because of obligatory edema.
Airway Management (NIC)	
Elevate head of bed. Avoid use of pillow under head, as indicated.	Promotes optimal lung expansion/respiratory function. When head/neck burns are present, a pillow can inhibit respiration, cause necrosis of burned ear cartilage, and promote neck contractures.
Encourage coughing/deep-breathing exercises and frequent position changes.	Promotes lung expansion, mobilization and drainage of secretions.
Suction (if necessary) with extreme care, maintaining sterile technique.	Helps maintain clear airway, but should be done cautiously because of mucosal edema and inflammation. Sterile technique reduces risk of infection.
Promote voice rest, but assess ability to speak and/or swallow oral secretions periodically.	Increasing hoarseness/decreased ability to swallow suggests increasing tracheal edema and may indicate need for prompt intubation.
Collaborative	
Administer humidified oxygen via appropriate mode, e.g., face mask.	O_2 corrects hypoxemia/acidosis. Humidity decreases drying of respiratory tract and reduces viscosity of sputum.
Monitor/graph serial ABGs or pulse oximetry.	Baseline is essential for further assessment of respiratory status and as a guide to treatment. Pao_2 less than 50, $Paco_2$ greater than 50, and decreasing pH reflect smoke inhalation and developing pneumonia/ARDS.
Review serial chest x-rays.	Changes reflecting atelectasis/pulmonary edema may not occur for 2–3 days after burn.
Provide/assist with chest physiotherapy and incentive spirometry.	Chest physiotherapy drains dependent areas of the lung, and incentive spirometry may be done to improve lung expansion, thereby promoting respiratory function and reducing atelectasis.
Prepare for/assist with intubation or tracheostomy, as indicated.	Intubation/mechanical support is required when airway edema or circumferential burn injury interferes with respiratory function/oxygenation.

NURSING DIAGNOSIS: Fluid Volume, risk for deficient

Risk factors may include

Loss of fluid through abnormal routes, e.g., burn wounds
Increased need: hypermetabolic state, insufficient intake
Hemorrhagic losses

Possibly evidenced by

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

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Hydration (NOC)

Demonstrate improved fluid balance as evidenced by individually adequate urinary output with normal specific gravity, stable vital signs, moist mucous membranes.

ACTIONS/INTERVENTIONS	RATIONALE
Shock Prevention (NIC)	
Independent	
Monitor vital signs, central venous pressure (CVP). Note capillary refill and strength of peripheral pulses.	Serves as a guide to fluid replacement needs and assesses cardiovascular response. *Note:* Invasive monitoring is indicated for patients with major burns, smoke inhalation, or preexisting cardiac disease, although there is an associated increased risk of infection, necessitating careful monitoring and care of insertion site.
Monitor urinary output and specific gravity. Observe urine color and Hematest as indicated.	Generally, fluid replacement should be titrated to ensure average urinary output of 30–50 mL/hr (in the adult). Urine can appear red to black (with massive muscle destruction) because of presence of blood and release of myoglobin. If gross myoglobinuria is present, minimum urinary output should be 75–100 mL/hr to reduce risk of tubular damage and renal failure.
Estimate wound drainage and insensible losses.	Increased capillary permeability, protein shifts, inflammatory process, and evaporative losses greatly affect circulating volume and urinary output, especially during initial 24–72 hr after burn injury.
Maintain cumulative record of amount and types of fluid intake.	Massive/rapid replacement with different types of fluids and fluctuations in rate of administration require close tabulation to prevent constituent imbalances or fluid overload.
Weigh daily.	Fluid replacement formulas partly depend on admission weight and subsequent changes. A 15%–20% weight gain can be anticipated in the first 72 hr during fluid replacement, with return to preburn weight approximately 10 days after burn.

ACTIONS/INTERVENTIONS	RATIONALE
Shock Prevention (NIC)	
Independent	
Measure circumference of burned extremities as indicated.	May be helpful in estimating extent of edema/fluid shifts affecting circulating volume and urinary output.
Investigate changes in mentation.	Deterioration in the level of consciousness may indicate inadequate circulating volume/reduced cerebral perfusion.
Observe for gastric distension, hematemesis, tarry stools. Hematest nasogastric (NG) drainage and stools periodically.	Stress (Curling's) ulcer occurs in up to half of all severely burned patients and can occur as early as the first week. Patients with burns more than 20% TBSA are at risk for mucosal bleeding in the gastrointestinal (GI) tract during the acute phase because of decreased splanchnic blood flow and reflex paralytic ileus.
Collaborative	
Insert/maintain indwelling urinary catheter.	Allows for close observation of renal function and prevents urinary retention. Retention of urine with its by-products of tissue-cell destruction can lead to renal dysfunction and infection.
Insert/maintain large-bore IV catheter(s).	Accommodates rapid infusion of fluids.
Administer calculated IV replacement of fluids, electrolytes, plasma, albumin.	Fluid resuscitation replaces lost fluids/electrolytes and helps prevent complications, e.g., shock, acute tubular necrosis (ATN). Replacement formulas vary (e.g., Brooke, Evans, Parkland) but are based on extent of injury, amount of urinary output, and weight. *Note:* Once initial fluid resuscitation has been accomplished, a steady rate of fluid administration is preferred to boluses, which may increase interstitial fluid shifts and cardiopulmonary congestion.
Monitor laboratory studies (e.g., Hb/Hct, electrolytes, random urine sodium).	Identifies blood loss/RBC destruction and fluid and electrolyte replacement needs. Urine sodium less than 10 mEq/L suggests inadequate fluid resuscitation. *Note:* During first 24 hr after burn, hemoconcentration is common because of fluid shifts into the interstitial space.
Administer medications as indicated:	
Diuretics, e.g., mannitol (Osmitrol);	May be indicated to enhance urinary output and clear tubules of debris/prevent necrosis if acute renal failure (ARF) is present.
Potassium;	Although hyperkalemia often occurs during first 24–48 hr (tissue destruction), subsequent replacement may be necessary because of large urinary losses.
Antacids, e.g., calcium carbonate (Titralac), magaldrate (Riopan); histamine inhibitors, e.g., cimetidine (Tagamet)/ranitidine (Zantac).	Antacids may reduce gastric acidity; histamine inhibitors decrease production of hydrochloric acid to reduce risk of gastric irritation/bleeding.

ACTIONS/INTERVENTIONS	RATIONALE
Shock Prevention (NIC)	
Collaborative	
Add electrolytes to water used for wound debridement, as indicated.	Washing solution that approximates tissue fluids may minimize osmotic fluid shifts.

NURSING DIAGNOSIS: Infection, risk for

Risk factors may include

Inadequate primary defenses: destruction of skin barrier, traumatized tissues
Inadequate secondary defenses: decreased Hb, suppressed inflammatory response
Environmental exposure, invasive procedures

Possibly evidenced by

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

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Wound Healing—Secondary Intention (NOC)

Achieve timely wound healing free of purulent exudate and be afebrile.

ACTIONS/INTERVENTIONS	RATIONALE
Infection Protection (NIC)	
Independent	
Implement appropriate isolation techniques as indicated.	Dependent on type/extent of wounds and the choice of wound treatment (e.g., open versus closed), isolation may range from simple wound/skin to complete or reverse to reduce risk of cross-contamination and exposure to multiple bacterial flora.
Emphasize/model good handwashing technique for all individuals coming in contact with patient.	Prevents cross-contamination; reduces risk of acquired infection.
Use gowns, gloves, masks, and strict aseptic technique during direct wound care and provide sterile or freshly laundered bed linens/gowns.	Prevents exposure to infectious organisms.
Monitor/limit visitors, if necessary. If isolation is used, explain procedure to visitors. Supervise visitor adherence to protocol as indicated.	Prevents cross-contamination from visitors. Concern for risk of infection should be balanced against patient's need for family support and socialization.

ACTIONS/INTERVENTIONS	RATIONALE
Wound Care (NIC)	
Independent	
Shave/clip all hair from around burned areas to include a1-in border (excluding eyebrows). Shave facial hair (men) and shampoo head daily.	Hair is a good medium for bacterial growth; however, eyebrows act as a protective barrier for the eyes. Regular shampooing decreases bacterial fallout into burned areas.
Examine unburned areas (such as groin, neck creases, mucous membranes) and vaginal discharge routinely.	Opportunistic infections (e.g., yeast) frequently occur because of depression of the immune system and/or proliferation of normal body flora during systemic antibiotic therapy.
Provide special care for eyes, e.g., use eye covers and tear formulas as appropriate.	Eyes may be swollen shut and/or become infected by drainage from surrounding burns. If lids are burned, eye covers may be needed to prevent corneal damage.
Prevent skin-to-skin surface contact (e.g., wrap each burned finger/toe separately; do not allow burned ear to touch scalp).	Prevents adherence to surface it may be touching and encourages proper healing. *Note:* Ear cartilage has limited circulation and is prone to pressure necrosis.
Examine wounds daily, note/document changes in appearance, odor, or quantity of drainage.	Identifies presence of healing (granulation tissue) and provides for early detection of burn-wound infection. Infection in a partial-thickness burn may cause conversion of burn to full-thickness injury. *Note:* A strong sweet, musty smell at a graft site is indicative of *Pseudomonas.*
Monitor vital signs for fever, increased respiratory rate/depth in association with changes in sensorium, presence of diarrhea, decreased platelet count, and hyperglycemia with glycosuria.	Indicators of sepsis (often occurs with full-thickness burn) requiring prompt evaluation and intervention. *Note:* Changes in sensorium, bowel habits, and respiratory rate usually precede fever and alteration of laboratory studies.
Collaborative	
Remove dressings and cleanse burned areas in a hydrotherapy/whirlpool tub or in a shower stall with handheld shower head. Maintain temperature of water at100°F (37.8°C). Wash areas with a mild cleansing agent or surgical soap.	Water softens and aids in removal of dressings and eschar (slough layer of dead skin or tissue). Sources vary as to whether bath or shower is best. Bath has advantage of water providing support for exercising extremities but may promote cross-contamination of wounds. Showering enhances wound inspection and prevents contamination from floating debris.
Excise and cover burn wounds quickly.	Early excision is known to reduce scarring and risk of infection, thereby facilitating healing.
Debride necrotic/loose tissue (including ruptured blisters) with scissors and forceps. Do not disturb intact blisters if they are smaller than 1–2 cm, do not interfere with joint function, and do not appear infected.	Promotes healing. Prevents autocontamination. Small, intact blisters help protect skin and increase rate of re-epithelialization unless the burn injury is the result of chemicals (in which case fluid contained in blisters may continue to cause tissue destruction).
Photograph wound initially and at periodic intervals.	Provides baseline and documentation of healing process.

ACTIONS/INTERVENTIONS	RATIONALE
Wound Care (NIC)	
Collaborative	
Administer topical agents as indicated, e.g.:	The following agents help control bacterial growth and prevent drying of wound, which can cause further tissue destruction.
Silver sulfadiazine (Silvadene);	Broad-spectrum antimicrobial that is relatively painless but has intermediate, somewhat delayed eschar penetration. May cause rash or depression of WBCs.
Mafenide acetate (Sulfamylon);	Antibiotic of choice with confirmed invasive burn-wound infection. Useful against Gram-negative/Gram-positive organisms. Causes burning/pain on application and for 30 min thereafter. Can cause rash, metabolic acidosis, and decreased $Paco_2$.
Silver nitrate;	Effective against *Staphylococcus aureus, Escherichia coli,* and *Pseudomonas aeruginosa,* but has poor eschar penetration, is painful, and may cause electrolyte imbalance. Dressings must be constantly saturated. Product stains skin/surfaces black.
Bacitracin;	Effective against Gram-positive organisms and is generally used for superficial and facial burns.
Povidone-iodine (Betadine);	Broad-spectrum antimicrobial, but is painful on application, may cause metabolic acidosis/increased iodine absorption, and damage fragile tissues.
Hydrogels, e.g., Transorb, Burnfree.	Useful for partial- and full-thickness burns; filling dead spaces, rehydrating dry wound beds, and promoting autolytic debridement. May be used when infection is present.
Administer other medications as appropriate, e.g.;	
Subeschar clysis/systemic antibiotics;	Systemic antibiotics are given to control general infections identified by culture/sensitivity. Subeschar clysis has been found effective against pathogens in granulated tissues at the line of demarcation between viable/nonviable tissue, reducing risk of sepsis.
Tetanus toxoid or clostridial antitoxin, as appropriate.	Tissue destruction/altered defense mechanisms increase risk of developing tetanus or gas gangrene, especially in deep burns such as those caused by electricity.

ACTIONS/INTERVENTIONS	RATIONALE
Infection Prevention (NIC)	
Collaborative	
Place IV/invasive lines in nonburned area.	Decreased risk of infection at insertion site with possibility of progression to septicemia.
Obtain routine cultures and sensitivities of wounds/drainage.	Allows early recognition and specific treatment of wound infection.
Assist with excisional biopsies when infection is suspected.	Bacteria can colonize the wound surface without invading the underlying tissue; therefore, biopsies may be obtained for diagnosing infection.

NURSING DIAGNOSIS: Pain, acute

May be related to

Destruction of skin/tissues; edema formation
Manipulation of injured tissues, e.g., wound debridement

Possibly evidenced by

Reports of pain
Narrowed focus, facial mask of pain
Alteration in muscle tone; autonomic responses
Distraction/guarding behaviors; anxiety/fear, restlessness

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Pain Level (NOC)

Report pain reduced/controlled.
Display relaxed facial expressions/body posture.

Pain Control (NOC)

Participate in activities and sleep/rest appropriately.

ACTIONS/INTERVENTIONS	RATIONALE
Pain Management (NIC)	
Independent	
Cover wounds as soon as possible unless open-air exposure burn care method required.	Temperature changes and air movement can cause great pain to exposed nerve endings.
Elevate burned extremities periodically.	Elevation may be required initially to reduce edema formation; thereafter, changes in position and elevation reduce discomfort and risk of joint contractures.

ACTIONS/INTERVENTIONS	RATIONALE
Pain Management (NIC)	
Independent	
Provide bed cradle as indicated.	Elevation of linens off wounds may help reduce pain.
Wrap digits/extremities in position of function (avoiding flexed position of affected joints) using splints and footboards as necessary.	Position of function reduces deformities/contractures and promotes comfort. Although flexed position of injured joints may feel more comfortable, it can lead to flexion contractures.
Change position frequently and assist with active and passive ROM as indicated.	Movement and exercise reduce joint stiffness and muscle fatigue, but type of exercise depends on location and extent of injury.
Maintain comfortable environmental temperature, provide heat lamps, heat-retaining body coverings.	Temperature regulation may be lost with major burns. External heat sources may be necessary to prevent chilling.
Assess reports of pain, noting location/character and intensity (0–10 scale).	Pain is nearly always present to some degree because of varying severity of tissue involvement/destruction but is usually most severe during dressing changes and debridement. Changes in location, character, intensity of pain may indicate developing complications (e.g., limb ischemia) or herald improvement/return of nerve function/sensation.
Provide medication and/or place in hydrotherapy (as appropriate) before performing dressing changes and debridement.	Reduces severe physical and emotional distress associated with dressing changes and debridement.
Encourage expression of feelings about pain.	Verbalization allows outlet for emotions and may enhance coping mechanisms.
Involve patient in determining schedule for activities, treatments, drug administration.	Enhances patient's sense of control and strengthens coping mechanisms.
Explain procedures/provide frequent information as appropriate, especially during wound debridement.	Empathic support can help alleviate pain/promote relaxation. Knowing what to expect provides opportunity for patient to prepare self and enhances sense of control.
Provide basic comfort measures, e.g., massage of uninjured areas, frequent position changes.	Promotes relaxation; reduces muscle tension and general fatigue.
Encourage use of stress management techniques, e.g., progressive relaxation, deep breathing, guided imagery, and visualization.	Refocuses attention, promotes relaxation, and enhances sense of control, which may reduce pharmacological dependency.
Provide diversional activities appropriate for age/condition.	Helps lessen concentration on pain experience and refocus attention.
Promote uninterrupted sleep periods.	Sleep deprivation can increase perception of pain/reduce coping abilities.

ACTIONS/INTERVENTIONS	RATIONALE
Pain Management (NIC)	
Collaborative	
Administer analgesics (narcotic and nonnarcotic) as indicated, e.g., morphine; fentanyl (Sublimaze, Ultiva); hydrocodone (Vicodin, Hycodan); oxycodone(OxyContin, Percocet).	The burned patient may require around-the-clock medication and dose titration. IV method is often used initially to maximize drug effect. Concerns of patient addiction or doubts regarding degree of pain experienced are not valid during emergent/acute phase of care, but narcotics should be decreased as soon as feasible and alternative methods for pain relief initiated.
Provide/instruct in use of patient-controlled analgesia (PCA).	PCA provides for timely drug administration, preventing fluctuations in intensity of pain, often at lower total dosage than would be given by conventional methods.

NURSING DIAGNOSIS: Tissue Perfusion, ineffective/Peripheral Neurovascular dysfunction, risk for

Risk factors may include

Reduction/interruption of arterial/venous blood flow, e.g., circumferential burns of extremities with resultant edema

Hypovolemia

Possibly evidenced by

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

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Tissue Perfusion: Peripheral (NOC)

Maintain palpable peripheral pulses of equal quality/strength; good capillary refill and skin color normal in uninjured areas.

ACTIONS/INTERVENTIONS	RATIONALE
Circulatory Care: Venous [or] Arterial (NIC)	
Independent	
Assess color, sensation, movement, peripheral pulses (via Doppler), and capillary refill on extremities with circumferential burns. Compare with findings of unaffected limb.	Edema formation can readily compress blood vessels, thereby impeding circulation and increasing venous stasis/edema. Comparisons with unaffected limbs aid in differentiating localized versus systemic problems (e.g., hypovolemia/decreased cardiac output).
Elevate affected extremities, as appropriate. Remove jewelry/arm band. Avoid taping around a burned extremity/digit.	Promotes systemic circulation/venous return and may reduce edema or other deleterious effects of constriction of edematous tissues. Prolonged elevation can impair arterial perfusion if blood pressure (BP) falls or tissue pressures rise excessively.

ACTIONS/INTERVENTIONS	RATIONALE
Circulatory Care: Venous [or] Arterial (NIC)	
Independent	
Obtain BP in unburned extremity when possible. Remove BP cuff after each reading, as indicated.	If BP readings must be obtained on an injured extremity, leaving the cuff in place may increase edema formation/reduce perfusion, and convert partial-thickness burn to a more serious injury.
Investigate reports of deep/throbbing ache, numbness.	Indicators of decreased perfusion and/or increased pressure within enclosed space, such as may occur with a circumferential burn of an extremity (compartmental syndrome).
Encourage active ROM exercises of unaffected body parts.	Promotes local and systemic circulation.
Investigate irregular pulses.	Cardiac dysrhythmias can occur as a result of electrolyte shifts, electrical injury, or release of myocardial depressant factor, compromising cardiac output/tissue perfusion.
Collaborative	
Maintain fluid replacement per protocol. (Refer to ND: Fluid Volume, risk for deficient.)	Maximizes circulating volume and tissue perfusion.
Monitor electrolytes, especially sodium, potassium, and calcium. Administer replacement therapy as indicated.	Losses/shifts of these electrolytes affect cellular membrane potential/excitability, thereby altering myocardial conductivity, potentiating risk of dysrhythmias, and reducing cardiac output and tissue perfusion.
Avoid use of IM/SC injections.	Altered tissue perfusion and edema formation impair drug absorption. Injections into potential donor sites may render them unusable because of hematoma formation.
Measure intracompartmental pressures as indicated. (Refer to CP: Fractures; ND: Peripheral Neurovascular dysfunction, risk for.)	Ischemic myositis may develop because of decreased perfusion.
Assist with/prepare for escharotomy/fasciotomy, as indicated.	Enhances circulation by relieving constriction caused by rigid, nonviable tissue (eschar) or edema formation.

NURSING DIAGNOSIS: Nutrition: imbalanced, less than body requirements

May be related to

Hypermetabolic state (can be as much as 50%–60% higher than normal proportional to the severity of injury)
Protein catabolism
Anorexia, restricted oral intake

Possibly evidenced by

Decrease in total body weight, loss of muscle mass/subcutaneous fat, and development of negative nitrogen balance

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Nutritional Status (NOC)

Demonstrate nutritional intake adequate to meet metabolic needs as evidenced by stable weight/muscle-mass measurements, positive nitrogen balance, and tissue regeneration.

ACTIONS/INTERVENTIONS	RATIONALE
Nutrition Therapy (NIC)	
Independent	
Auscultate bowel sounds, noting hypoactive/absent sounds.	Ileus is often associated with postburn period but usually subsides within 36–48 hr, at which time oral feedings can be initiated.
Maintain strict calorie count. Weigh daily. Reassess percentage of open body surface area/wounds weekly.	Appropriate guides to proper caloric intake include 25 kcal/kg body weight, plus 40 kcal per percentage of TBSA burn in the adult. As burn wound heals, percentage of burned areas is reevaluated to calculate prescribed dietary formulas, and appropriate adjustments are made.
Monitor muscle mass/subcutaneous fat as indicated.	Indirect calorimetry, if available, may be useful in more accurately estimating body reserves/losses and effectiveness of therapy.
Provide small, frequent meals and snacks.	Helps prevent gastric distension/discomfort and may enhance intake.
Encourage patient to view diet as a treatment and to make food/beverage choices high in calories/protein.	Calories and proteins are needed to maintain weight, meet metabolic needs, and promote wound healing.
Ascertain food likes/dislikes. Encourage SO to bring food from home, as appropriate.	Provides patient/SO sense of control; enhances participation in care and may improve intake.
Encourage patient to sit up for meals and visit with others.	Sitting helps prevent aspiration and aids in proper digestion of food. Socialization promotes relaxation and may enhance intake.
Provide oral hygiene before meals.	Clean mouth/clear palate enhances taste and helps promote a good appetite.

ACTIONS/INTERVENTIONS	RATIONALE
Nutrition Therapy (NIC)	
Independent	
Perform fingerstick glucose, urine testing as indicated.	Monitors for development of hyperglycemia related to hormonal changes/demands or use of hyperalimentation to meet caloric needs.
Collaborative	
Refer to dietitian/nutritional support team.	Useful in establishing individual nutritional needs (based on weight and body surface area of injury) and identifying appropriate routes.
Provide diet high in calories/protein with trace elements and vitamin supplements.	Calories (3000–5000/day), proteins, and vitamins are needed to meet increased metabolic needs, maintain weight, and encourage tissue regeneration. *Note:* Oral route is preferable once GI function returns.
Insert/maintain small feeding tube for enteral feedings and supplements if needed.	Provides continuous/supplemental feedings when patient is unable to consume total daily calorie requirements orally. *Note:* Continuous tube feeding during the night increases calorie intake without decreasing appetite and oral intake during the day.
Administer parenteral nutritional solutions containing vitamins and minerals, as indicated.	Total parenteral nutrition (TPN) maintains nutritional intake/meets metabolic needs in presence of severe complications or sustained esophageal/gastric injuries that do not permit enteral feedings.
Monitor laboratory studies, e.g., serum albumin/ prealbumin, Cr, transferrin; urine urea nitrogen.	Indicators of nutritional needs and adequacy of diet/therapy.
Administer insulin as indicated.	Elevated serum glucose levels may develop because of stress response to injury, high caloric intake, pancreatic fatigue.

NURSING DIAGNOSIS: Mobility, impaired physical

May be related to

Neuromuscular impairment, pain/discomfort, decreased strength and endurance
Restrictive therapies, limb immobilization; contractures

Possibly evidenced by

Reluctance to move/inability to purposefully move
Limited ROM, decreased muscle strength control and/or mass

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Mobility Level (NOC)

Maintain position of function as evidenced by absence of contractures.
Maintain or increase strength and function of affected and/or compensatory body part.

Self-Care: Activities of Daily Living (ADLs) (NOC)

Verbalize and demonstrate willingness to participate in activities.
Demonstrate techniques/behaviors that enable resumption of activities.

ACTIONS/INTERVENTIONS	RATIONALE
Bed Rest Care (NIC)	
Independent	
Maintain proper body alignment with supports or splints, especially for burns over joints.	Promotes functional positioning of extremities and prevents contractures, which are more likely over joints.
Note circulation, motion, and sensation of digits frequently.	Edema may compromise circulation to extremities, potentiating tissue necrosis/development of contractures.
Initiate the rehabilitative phase on admission.	It is easier to enlist participation when patient is aware of the possibilities that exist for recovery.
Perform ROM exercises consistently, initially passive, then active.	Prevents progressively tightening scar tissue and contractures; enhances maintenance of muscle/joint functioning and reduces loss of calcium from the bone.
Medicate for pain before activity/exercises.	Reduces muscle/tissue stiffness and tension, enabling patient to be more active and facilitating participation.
Schedule treatments and care activities to provide periods of uninterrupted rest.	Increases patient's strength and tolerance for activity.
Encourage family/SO support and assistance with ROM exercises.	Enables family/SO to be active in patient care and provides more constant/consistent therapy.
Self-Care Assistance (NIC)	
Incorporate ADLs with physical therapy, hydrotherapy, and nursing care.	Combining activities produces improved results by enhancing effects of each.
Encourage patient participation in all activities as individually able.	Promotes independence, enhances self-esteem, and facilitates recovery process.

ACTIONS/INTERVENTIONS	RATIONALE
Self-Care Assistance (NIC)	
Independent	
Instruct and assist with mobility aids, e.g., cane, walker, crutches, as appropriate.	Promotes safe ambulation.
Bed Rest Care (NIC)	
Collaborative	
Provide foam, water/air mattress or kinetic therapy bed, as indicated.	Prevents prolonged pressure on tissues, reducing potential for tissue ischemia/necrosis and decubitus formation.
Maintain pressure garment when used.	Hypertrophic scarring can develop around grafted areas or at the site of deep partial-thickness wounds. Pressure dressings minimize scar tissue by keeping it flat, soft, and pliable, enhancing movement.
Consult with rehabilitation, physical, and occupational therapists.	Normally members of the burn team, these specialists provide integrated activity/exercise program and specific assistive devices based on individual needs. Consultation facilitates intensive long-term management of potential deficits.

NURSING DIAGNOSIS: Skin Integrity, impaired [grafts]

May be related to

Disruption of skin surface with destruction of skin layers (partial-/full-thickness burn) requiring grafting

Possibly evidenced by

Absence of viable tissue

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Wound Healing: Secondary Intention (NOC)

Demonstrate tissue regeneration.
Achieve timely healing of burned areas.

ACTIONS/INTERVENTIONS	RATIONALE
Wound Care (NIC)	
Independent	
Preoperative	
Assess/document size, color, depth of wound, noting necrotic tissue and condition of surrounding skin.	Provides baseline information about need for skin grafting and possible clues about circulation in area to support graft.
Provide appropriate burn care and infection control measures. (Refer to ND: Infection, risk for.)	Prepares tissues for grafting and reduces risk of infection/graft failure.

ACTIONS/INTERVENTIONS	RATIONALE
Wound Care (NIC)	
Independent	
Postoperative	
Maintain wound covering as indicated, e.g.:	
Biosynthetic dressing (Biobrane);	Nylon fabric/silicon membrane containing collagenous porcine peptides that adheres to wound surface until removed or sloughed off by spontaneous skin re-epithelialization. Useful for eschar-free partial-thickness burns awaiting autografts because it can remain in place 2–3 wk or longer and is permeable to topical antimicrobial agents.
Synthetic dressings, e.g., DuoDerm;	Hydroactive dressing that adheres to the skin to cover small partial-thickness burns and that interacts with wound exudate to form a soft gel that facilitates debridement.
Opsite, Acu-Derm.	Thin, transparent, elastic, waterproof, occlusive dressing (permeable to moisture and air) that is used to cover clean partial-thickness wounds and clean donor sites.
Elevate grafted area if possible/appropriate. Maintain desired position and immobility of area when indicated.	Reduces swelling/limits risk of graft separation. Movement of tissue under graft can dislodge it, interfering with optimal healing.
Maintain dressings over newly grafted area and/or donor site as indicated, e.g., mesh, petroleum, nonadhesive.	Areas may be covered by translucent, nonreactive surface material (between graft and outer dressing) to eliminate shearing of new epithelium/protect healing tissue. The donor site is usually covered for 4–24 hr, then bulky dressings are removed and fine mesh gauze is left in place.
Keep skin free from pressure.	Promotes circulation and prevents ischemia/necrosis and graft failure.
Evaluate color of grafted and donor site(s); note presence/absence of healing.	Evaluates effectiveness of circulation and identifies developing complications.
Wash sites with mild soap, rinse, and lubricate with cream (e.g., Nivea) several times daily after dressings are removed and healing is accomplished.	Newly grafted skin and healed donor sites require special care to maintain flexibility.
Aspirate blebs under sheet grafts with sterile needle or roll with sterile swab.	Fluid-filled blebs prevent graft adherence to underlying tissue, increasing risk of graft failure.
Collaborative	
Prepare for/assist with surgical grafting or biological dressings, e.g.:	
Homograft (allograft);	Skin grafts obtained from living persons or cadavers are used as a temporary covering for extensive burns until person's own skin is ready for grafting (test graft), to cover excised wounds immediately after escharotomy, or to protect granulation tissue.

ACTIONS/INTERVENTIONS	RATIONALE
Wound Care (NIC)	
Collaborative	
Heterograft (xenograft, porcine);	Skin grafts may be carried out with animal skin for the same purposes as homografts or to cover meshed autografts.
Cultured epithelial autograft (CEA);	Skin graft obtained from uninjured part of patient's own skin and prepared in a laboratory; may be full-thickness or partial-thickness. *Note:* This process takes 20–30 days from harvest to application. The new CEA sheets are 1–6 cell layers thick and thus are very fragile.
Artificial skin (Integra).	Wound covering approved by the Food and Drug Administration (FDA) for full-thickness and deep partial-thickness burns. It provides a permanent, immediate covering that reproduces the skin's normal functions and stimulates the regeneration of dermal tissue.

NURSING DIAGNOSIS: Fear/Anxiety

May be related to

Situational crises: hospitalization/isolation procedures, interpersonal transmission and contagion, memory of the trauma experience, threat of death and/or disfigurement

Possibly evidenced by

Expressed concern regarding changes in life, fear of unspecific consequences
Apprehension; increased tension
Feelings of helplessness, uncertainty, decreased self-assurance
Sympathetic stimulation, extraneous movements, restlessness, insomnia

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Fear [or] Anxiety Control (NOC)

Verbalize awareness of feelings and healthy ways to deal with them.
Report anxiety/fear reduced to manageable level.
Demonstrate problem-solving skills, effective use of resources.

ACTIONS/INTERVENTIONS	RATIONALE
Anxiety Reduction (NIC)	
Independent	
Provide frequent explanations and information about care procedures. Repeat information as needed/desired.	Knowing what to expect usually reduces fear and anxiety, clarifies misconceptions, and promotes cooperation. *Note:* Because of the shock of the initial trauma, many people do not recall information provided during that time.

ACTIONS/INTERVENTIONS	RATIONALE
Anxiety Reduction (NIC)	
Independent	
Demonstrate willingness to listen and talk to patient when free of painful procedures.	Helps patient/SO know that support is available and that healthcare provider is interested in the person, not just care of the burn.
Involve patient/SO in decision-making process whenever possible. Provide time for questioning and repetition of proposed treatments.	Promotes sense of control and cooperation, decreasing feelings of helplessness/hopelessness.
Assess mental status, including mood/affect, comprehension of events, and content of thoughts, e.g., illusions or manifestations of terror/panic.	Initially, patient may use denial and repression to reduce and filter information that might be overwhelming. Some patients display calm manner and alert mental status, representing a dissociation from reality, which is also a protective mechanism.
Investigate changes in mentation and presence of hypervigilance, hallucinations, sleep disturbances (e.g., nightmares), agitation/apathy, disorientation, and labile affect, all of which may vary from moment to moment.	Indicators of extreme anxiety/delirium state in which patient is literally fighting for life. Although cause can be psychologically based, pathological life-threatening causes (e.g., shock, sepsis, hypoxia) must be ruled out.
Provide constant and consistent orientation.	Helps patient stay in touch with surroundings and reality.
Encourage patient to talk about the burn circumstances when ready.	Patient may need to tell the story of what happened over and over to make some sense out of a terrifying situation. Adjustment to the impact of the trauma, grief over losses and disfigurement can easily lead to clinical depression, psychosis, and posttraumatic stress disorder (PTSD).
Explain to patient what happened. Provide opportunity for questions and give open/honest answers.	Compassionate statements reflecting the reality of the situation can help patient/SO acknowledge that reality and begin to deal with what has happened.
Identify previous methods of coping/handling of stressful situations.	Past successful behavior can be used to assist in dealing with the present situation.
Create a restful environment, use guided imagery and relaxation exercises.	Patients experience severe anxiety associated with burn trauma and treatment. These interventions are soothing and helpful for positive outcomes.
Assist the family to express their feelings of grief and guilt.	The family may initially be most concerned about patient's dying and/or feel guilty, believing that in some way they could have prevented the incident.
Be empathetic and nonjudgmental in dealing with patient and family.	Family relationships are disrupted; financial, lifestyle/role changes make this a difficult time for those involved with patient, and they may react in many different ways.
Encourage family/SO to visit and discuss family happenings. Remind patient of past and future events.	Maintains contact with a familiar reality, creating a sense of attachment and continuity of life.

ACTIONS/INTERVENTIONS	RATIONALE
Anxiety Reduction (NIC)	
Collaborative	
Involve entire burn team in care from admission to discharge, including social worker and psychiatric resources.	Provides a wider support system and promotes continuity of care and coordination of activities.
Administer mild sedation as indicated, lorazepam (Ativan), alprazolam (Xanax), midazolam (Versed).	Antianxiety medications may be necessary for a brief period until patient is more physically stable and internal locus of control is regained.

NURSING DIAGNOSIS: Body Image disturbed/Role Performance, ineffective

May be related to

Situational crisis: traumatic event, dependent patient role; disfigurement, pain

Possibly evidenced by

Negative feelings about body/self, fear of rejection/reaction by others
Focus on past appearance, abilities; preoccupation with change/loss
Change in physical capacity to resume role; change in social involvement

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Body Image (NOC)

Incorporate changes into self-concept without negating self-esteem.
Verbalize acceptance of self in situation.

Role Performance (NOC)

Talk with family/SO about situation, changes that have occurred.
Develop realistic goals/plans for the future.

ACTIONS/INTERVENTIONS	RATIONALE
Body Image [or] Role Enhancement (NIC)	
Independent	
Assess meaning of loss/change to patient/SO, including future expectations and impact of cultural/religious beliefs.	Traumatic episode results in sudden, unanticipated changes, creating feelings of grief over actual/perceived losses. This necessitates support to work through to optimal resolution.
Acknowledge and accept expression of feelings of frustration, dependency, anger, grief, and hostility. Note withdrawn behavior and use of denial.	Acceptance of these feelings as a normal response to what has occurred facilitates resolution. It is not helpful or possible to push patient before ready to deal with situation. Denial may be prolonged and be an adaptive mechanism because patient is not ready to cope with personal problems.

ACTIONS/INTERVENTIONS	RATIONALE
Body Image [or] Role Enhancement (NIC)	
Independent	
Set limits on maladaptive behavior (e.g., manipulative/ aggressive). Maintain nonjudgmental attitude while giving care, and help patient identify positive behaviors that will aid in recovery.	Patient and SO tend to deal with this crisis in the same way in which they have dealt with problems in the past. Staff may find it difficult and frustrating to handle behavior that is disrupting/not helpful to recuperation but should realize that the behavior is usually directed toward the situation and not the caregiver.
Be realistic and positive during treatments, in health teaching, and in setting goals within limitations.	Enhances trust and rapport between patient and nurse.
Encourage patient/SO to view wounds and assist with care as appropriate.	Promotes acceptance of reality of injury and of change in body and image of self as different.
Provide hope within parameters of individual situation; do not give false reassurance.	Promotes positive attitude and provides opportunity to set goals and plan for future based on reality.
Assist patient to identify extent of actual change in appearance/body function.	Helps begin process of looking to the future and how life will be different.
Give positive reinforcement of progress and encourage endeavors toward attainment of rehabilitation goals.	Words of encouragement can support development of positive coping behaviors.
Show slides or pictures of burn care/other patient outcomes, being selective in what is shown as appropriate to the individual situation. Encourage discussion of feelings about what patient has seen.	Allows patient/SO to be realistic in expectations. Also assists in demonstration of importance of/necessity for certain devices and procedures.
Encourage family interaction with each other and with rehabilitation team.	Maintains/opens lines of communication and provides ongoing support for patient and family.
Provide support group for SO. Give information about how SO can be helpful to patient.	Promotes ventilation of feelings and allows for more helpful responses to patient.
Role-play social situations of concern to patient.	Prepares patient/SO for reactions of others and anticipates ways to deal with them.
Collaborative	
Refer to physical/occupational therapy, vocational counselor, and psychiatric counseling, e.g., clinical specialist psychiatric nurse, social services, psychologist, as needed.	Helpful in identifying ways/devices to regain and maintain independence. Patient may need further assistance to resolve persistent emotional problems (e.g., posttrauma response).

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

May be related to

Lack of exposure/recall
Information misinterpretation; unfamiliarity with resources

Possibly evidenced by

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

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Knowledge: Disease Process (NOC)

Verbalize understanding of condition, prognosis, and potential complications.

Knowledge: Treatment Regimen (NOC)

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

ACTIONS/INTERVENTIONS	RATIONALE
Teaching: Disease Process (NIC)	
Independent	
Review condition, prognosis, and future expectations.	Provides knowledge base from which patient can make informed choices.
Discuss patient's expectations of returning home, to work, and to normal activities.	Patient frequently has a difficult and prolonged adjustment after discharge. Problems often occur (e.g., sleep disturbances, nightmares, reliving the accident, difficulty with resumption of social interactions, intimacy/sexual activity, emotional lability) that interfere with successful adjustment to resuming normal life.
Review and have patient/SO demonstrate proper burn, skin-graft, and wound care techniques. Identify appropriate sources for outpatient care and supplies.	Promotes competent self-care after discharge, enhancing independence.
Discuss skin care, e.g., use of moisturizers, sunscreens, and anti-itching medications.	Itching, blistering, and sensitivity of healing wounds/graft sites can be expected for an extended time, and injury can occur because of the fragility of the new tissue.
Explain scarring process and necessity for/proper use of pressure garments when used.	Promotes optimal regrowth of skin, minimizing development of hypertrophic scarring and contractures and facilitating healing process. *Note:* Consistent use of the pressure garment over a long period can reduce the need for reconstructive surgery to release contractures and remove scars.
Encourage continuation of prescribed exercise program and scheduled rest periods.	Maintains mobility, reduces complications, and prevents fatigue, facilitating recovery process.

ACTIONS/INTERVENTIONS	RATIONALE
Teaching: Disease Process (NIC)	
Independent	
Identify specific limitations of activity as individually appropriate.	Imposed restrictions depend on severity/location of injury and stage of healing.
Emphasize importance of sustained intake of high-protein/ high-calorie meals and snacks.	Optimal nutrition enhances tissue regeneration and general feeling of well-being. *Note:* Patient often needs to increase caloric intake to meet calorie and protein needs for healing.
Review medications, including purpose, dosage, route, and expected/reportable side effects.	Reiteration allows opportunity for patient to ask questions and be sure understanding is accurate.
Advise patient/SO of potential for exhaustion, boredom, emotional lability, adjustment problems. Provide information about possibility of discussion/interaction with appropriate professional counselors.	Provides perspective to some of the problems patient/SO may encounter, and aids awareness that assistance is available when necessary.
Identify signs/symptoms requiring medical evaluation, e.g., inflammation, increase or changes in wound drainage, fever/chills; changes in pain characteristics or loss of mobility/function.	Early detection of developing complications (e.g., infection, delayed healing) may prevent progression to more serious/life-threatening situations.
Stress necessity/importance of follow-up care/ rehabilitation.	Long-term support with continual reevaluation and changes in therapy is required to achieve optimal recovery.
Provide phone number for contact person.	Provides easy access to treatment team to reinforce teaching, clarify misconceptions, and reduce potential for complications.
Identify community resources, e.g., skin/wound care professionals, crisis centers, recovery groups, mental health, Red Cross, visiting nurse, Ambli-Cab, homemaker service.	Facilitates transition to home, provides assistance with meeting individual needs, and supports independence.

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

Coping, ineffective—situational crisis; vulnerability.
Disuse Syndrome, risk for—severe pain, prescribed immobilization/restrictive therapies.
Self-Esteem, situational low—change in health status/independent functioning, perceived loss of control in some aspect of life.
Therapeutic Regimen: ineffective management—complexity of medical regimen, added demands made on individual/family, social support deficits.
Post-Trauma Syndrome—catastrophic accident/injury to self and possibly others.