

LUNG CANCER (POSTOPERATIVE CARE)

Lung cancer is the leading cause of cancer death in the United States and usually develops within the wall or epithelium of the bronchial tree. The two major categories are small cell lung cancers (SCLC), such as oat cell; and non-small cell lung cancers (NSCLC), which include adenocarcinoma, squamous cell and large cell carcinomas. Prognosis is generally poor, varying with the type of cancer and extent of involvement at the time of diagnosis. Survival rates are better with NSCLC, especially if treated in early stages. Although NSCLC tumors are frequently associated with metastases, they are generally slow growing.

Treatment options can include combinations of surgery, radiation, and chemotherapy. Surgery is the primary treatment for stage I and stage II tumors. Selected stage III carcinomas may be operable if the tumor is resectable. Surgical procedures for operable tumors of the lung include:

1. Pneumonectomy (removal of an entire lung), performed for lesions originating in the mainstem bronchus or lobar bronchus.
2. Lobectomy (removal of one lobe), preferred for peripheral carcinoma localized in a lobe.
3. Wedge or segmental resection, performed for lesions that are small and well contained within one segment.
4. Endoscopic laser resection may be done on peripheral tumors to reduce the necessity of cutting through ribs.

CARE SETTING

Inpatient surgical and possibly subacute units.

RELATED CONCERNS

Cancer

Hemothorax/pneumothorax

Psychosocial aspects of care

Radical neck surgery: laryngectomy (postoperative care)

Surgical intervention

Patient Assessment Database (Preoperative)

Findings depend on type, duration of cancer, and extent of metastasis.

ACTIVITY/REST

May report: Fatigue, inability to maintain usual routine, dyspnea with activity

May exhibit: Lassitude (usually in advanced stage)

CIRCULATION

May exhibit: Jugular venous distention (JVD) (with vena caval obstruction)

Heart sounds: Pericardial rub (indicating effusion)

Tachycardia/dysrhythmias

Clubbing of fingers

EGO INTEGRITY

May report: Frightened feelings, fear of outcome of surgery
Denial of severity of condition/potential for malignancy

May exhibit: Restlessness, insomnia, repetitive questioning

ELIMINATION

May report: Intermittent diarrhea (hormonal imbalance, SCLC)
Increased frequency/amount of urine (hormonal imbalance, epidermoid tumor)

FOOD/FLUID

May report: Weight loss, poor appetite, decreased food intake
Difficulty swallowing
Thirst/increased fluid intake

May exhibit: Thin, emaciated, or wasted appearance (late stages)
Edema of face/neck, chest, back (vena caval obstruction); facial/periorbital edema (hormonal imbalance, SCLC)
Glucose in urine (hormonal imbalance, epidermoid tumor)

PAIN/DISCOMFORT

May report: Chest pain (not usually present in early stages and not always in advanced stages), which may/may not be affected by position change
Shoulder/arm pain (particularly with large cell or adenocarcinoma)
Bone/joint pain: Cartilage erosion secondary to increased growth hormones (large cell carcinoma or adenocarcinoma)

Intermittent abdominal pain
May exhibit: Distraction behaviors (restlessness, withdrawal)
Guarding/protective actions

RESPIRATION

May report: Mild cough or change in usual cough pattern and/or sputum production
Shortness of breath
Occupational exposure to pollutants, industrial dusts (e.g., asbestos, iron oxides, coal dust), radioactive material
Hoarseness/change in voice (vocal cord paralysis)
History of smoking

May exhibit: Dyspnea, aggravated by exertion
Increased tactile fremitus (indicating consolidation)
Brief crackles/wheezes on inspiration or expiration (impaired airflow)
Persistent crackles/wheezes; tracheal shift (space-occupying lesion)
Hemoptysis

SAFETY

May exhibit: Fever may be present (large cell carcinoma or adenocarcinoma)
Bruising, discoloration of skin (hormonal imbalance, SCLC)

SEXUALITY

May exhibit: Gynecomastia (neoplastic hormonal changes, large cell carcinoma)
Amenorrhea/impotence (hormonal imbalance, SCLC)

TEACHING/LEARNING

May report: Familial risk factors: Cancer (especially lung), tuberculosis
Failure to improve

Discharge plan considerations: **DRG projected mean length of inpatient stay: 9.9 days**
Assistance with transportation, medications, treatments, self-care, homemaker/maintenance tasks.

Refer to section at end of plan for postdischarge considerations.

DIAGNOSTIC STUDIES

Fiberoptic bronchoscopy: Allows for direct visualization, regional washings, and cytologic brushing of lesions (large percentage of bronchogenic carcinomas may be visualized).

Chest x-ray (PA[posteroanterior] and lateral), chest computed tomography (CT): Outlines shape, size, and location of lesion. May reveal mass of air in hilar region, pleural effusion, atelectasis, or erosion of ribs or vertebrae.

Positron emission tomography (PET): Useful diagnostic tool in early detection of cancer, allowing measurement of differential metabolic activity in normal and diseased tissues.

Magnetic resonance imaging (MRI) scan: May be used in combination or instead of CT scans to determine tumor size/location and for staging.

Cytologic examinations (sputum, pleural, or lymph node): Performed to assess presence/stage of carcinoma, and may identify tumors of the bronchial wall.

Needle or tissue biopsy: May be performed on scalene nodes, hilar lymph nodes, or pleura to establish diagnosis.

Mediastinoscopy: Used for staging of carcinoma and to examine for metastasis.

Pulmonary function studies and ABGs: Assess lung capacity to meet postoperative ventilatory needs.
Skin tests, absolute lymphocyte counts: May be done to evaluate for immunocompetence (common in lung cancers).
Bone scan; CT scan of brain, liver; gallium scan of liver, spleen, bone: Used to detect metastasis.

NURSING PRIORITIES

1. Maintain/improve respiratory function.
2. Control/alleviate pain.
3. Support efforts to cope with diagnosis/situation.
4. Provide information about disease process/prognosis and therapeutic regimen.

DISCHARGE GOALS

1. Oxygenation/ventilation adequate to meet individual activity needs.
2. Pain controlled.
3. Anxiety/fear decreased to manageable level.
4. Free of preventable complications.
5. Disease process/prognosis and planned therapies understood.
6. Plan in place to meet needs after discharge.

NURSING DIAGNOSIS: Gas Exchange, impaired
May be related to
 Removal of lung tissue
 Altered oxygen supply (hypoventilation)
 Decreased oxygen-carrying capacity of blood (blood loss)

Possibly evidenced by
 Dyspnea
 Restlessness/changes in mentation
 Hypoxemia and hypercapnia
 Cyanosis

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:
Respiratory Status: Gas Exchange (NOC)
 Demonstrate improved ventilation and adequate oxygenation of tissues by ABGs within patient’s normal range.
 Be free of symptoms of respiratory distress.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Respiratory Management (NIC)</p> <p>Independent</p> <p>Note respiratory rate, depth, and ease of respirations. Observe for use of accessory muscles, pursed-lip breathing, changes in skin/mucous membrane color, e.g., pallor, cyanosis.</p>	<p>Respirations may be increased as a result of pain or as an initial compensatory mechanism to accommodate for loss of lung tissue; however, increased work of breathing and cyanosis may indicate increasing oxygen consumption and energy expenditures and/or reduced respiratory reserve, e.g., elderly patient or extensive COPD.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Respiratory Management (NIC)</p> <p>Independent</p> <p>Auscultate lungs for air movement and abnormal breath sounds.</p> <p>Investigate restlessness and changes in mentation/level of consciousness.</p> <p>Assess patient response to activity. Encourage rest periods/limit activities to patient tolerance.</p> <p>Note development of fever.</p>	<p>Consolidation and lack of air movement on operative side are normal in the pneumonectomy patient; however, the lobectomy patient should demonstrate normal airflow in remaining lobes.</p> <p>May indicate increased hypoxia or complications such as mediastinal shift in pneumonectomy patient when accompanied by tachypnea, tachycardia, and tracheal deviation.</p> <p>Increased oxygen consumption/demand and stress of surgery can result in increased dyspnea and changes in vital signs with activity; however, early mobilization is desired to help prevent pulmonary complications and to obtain and maintain respiratory and circulatory efficiency. Adequate rest balanced with activity can prevent respiratory compromise.</p> <p>Fever within the first 24 hr after surgery is frequently due to atelectasis. Temperature elevation within the 5th to 10th postoperative day usually indicates an infection, e.g., wound or systemic.</p>
<p>Airway Management (NIC)</p> <p>Maintain patent airway by positioning, suctioning, use of airway adjuncts.</p> <p>Reposition frequently, placing patient in sitting positions and supine to side positions.</p> <p>Avoid positioning patient with a pneumonectomy on the operative side; instead, favor the “good lung down” position.</p> <p>Encourage/assist with deep-breathing exercises and pursed-lip breathing as appropriate.</p>	<p>Airway obstruction impedes ventilation, impairing gas exchange. (Refer to ND: Airway Clearance, ineffective.)</p> <p>Maximizes lung expansion and drainage of secretions.</p> <p>Research shows that positioning patients following lung surgery with their “good lung down” maximizes oxygenation by using gravity to enhance blood flow to the healthy lung, thus creating the best possible match between ventilation and perfusion.</p> <p>Promotes maximal ventilation and oxygenation and reduces/prevents atelectasis.</p>
<p>Tube Care: Chest (NIC)</p> <p>Maintain patency of chest drainage system for lobectomy, segmental/wedge resection patient.</p> <p>Note changes in amount/type of chest tube drainage.</p>	<p>Drains fluid from pleural cavity to promote re-expansion of remaining lung segments.</p> <p>Bloody drainage should decrease in amount and change to a more serous composition as recovery progresses. A sudden increase in amount of bloody drainage or return to frank bleeding suggests thoracic bleeding/hemothorax; sudden cessation suggests blockage of tube, requiring further evaluation and intervention.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Tube Care: Chest (NIC)</p> <p>Independent</p> <p>Observe presence/degree of bubbling in water-seal chamber.</p> <p>Airway Management (NIC)</p> <p>Collaborative</p> <p>Administer supplemental oxygen via nasal cannula, partial rebreathing mask, or high-humidity face mask, as indicated.</p> <p>Assist with/encourage use of incentive spirometer.</p> <p>Monitor/graph ABGs, pulse oximetry readings. Note hemoglobin (Hb) levels.</p>	<p>Air leaks immediately postoperative are not uncommon, especially following lobectomy or segmental resection; however, this should diminish as healing progresses. Prolonged or new leaks require evaluation to identify problems in patient versus the drainage system.</p> <p>Maximizes available oxygen, especially while ventilation is reduced because of anesthetic, depression, or pain, and during period of compensatory physiological shift of circulation to remaining functional alveolar units.</p> <p>Prevents/reduces atelectasis and promotes re-expansion of small airways.</p> <p>Decreasing PaO₂ or increasing PaCO₂ may indicate need for ventilatory support. Significant blood loss can result in decreased oxygen-carrying capacity, reducing PaO₂.</p>

<p>NURSING DIAGNOSIS: Airway Clearance, ineffective</p> <p>May be related to</p> <p>Increased amount/viscosity of secretions Restricted chest movement/pain Fatigue/weakness</p> <p>Possibly evidenced by</p> <p>Changes in rate/depth of respiration Abnormal breath sounds Ineffective cough Dyspnea</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Respiratory Status: Airway Patency (NOC)</p> <p>Demonstrate patent airway, with fluid secretions easily expectorated, clear breath sounds, and noiseless respirations.</p>
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ACTIONS/INTERVENTIONS	RATIONALE
<p>Airway Management (NIC)</p> <p>Independent</p> <p>Auscultate chest for character of breath sounds and presence of secretions.</p> <p>Assist patient with/instruct in effective deep breathing and coughing with upright position (sitting) and splinting of incision.</p> <p>Observe amount and character of sputum/aspirated secretions. Investigate changes as indicated.</p> <p>Suction if cough is weak or breath sounds not cleared by cough effort. Avoid deep endotracheal/nasotracheal suctioning in pneumonectomy patient if possible.</p> <p>Encourage oral fluid intake (at least 2500 mL/day) within cardiac tolerance.</p> <p>Assess for pain/discomfort and medicate on a routine basis and before breathing exercises.</p> <p>Collaborative</p> <p>Provide/assist with incentive spirometer, postural drainage/percussion as indicated.</p> <p>Use humidified oxygen/ultrasonic nebulizer. Provide additional fluids via IV as indicated.</p> <p>Administer bronchodilators, expectorants, and/or analgesics as indicated.</p>	<p>Noisy respirations, rhonchi, and wheezes are indicative of retained secretions and/or airway obstruction.</p> <p>Upright position favors maximal lung expansion, and splinting improves force of cough effort to mobilize and remove secretions. Splinting may be done by nurse (placing hands anteriorly and posteriorly over chest wall) and by patient (with pillows) as strength improves.</p> <p>Increased amounts of colorless (or blood-streaked)/watery secretions are normal initially and should decrease as recovery progresses. Presence of thick/tenacious, bloody, or purulent sputum suggests development of secondary problems (e.g., dehydration, pulmonary edema, local hemorrhage, or infection) that require correction/treatment.</p> <p>“Routine” suctioning increases risk of hypoxemia and mucosal damage. Deep tracheal suctioning is generally contraindicated following pneumonectomy to reduce the risk of rupture of the bronchial stump suture line. If suctioning is unavoidable, it should be done gently and only to induce effective coughing.</p> <p>Adequate hydration aids in keeping secretions loose/enhances expectoration.</p> <p>Encourages patient to move, cough more effectively, and breathe more deeply to prevent respiratory insufficiency.</p> <p>Improves lung expansion/ventilation and facilitates removal of secretions. <i>Note:</i> Postural drainage may be contraindicated in some patients and in any event must be performed cautiously to prevent respiratory embarrassment and incisional discomfort.</p> <p>Providing maximal hydration helps loosen/liquefy secretions to promote expectoration. Impaired oral intake necessitates IV supplementation to maintain hydration.</p> <p>Relieves bronchospasm to improve airflow. Expectorants increase mucus production and liquefy and reduce viscosity of secretions, facilitating removal. Alleviation of chest discomfort promotes cooperation with breathing exercises and enhances effectiveness of respiratory therapies.</p>

NURSING DIAGNOSIS: Pain,acute

May be related to

Surgical incision, tissue trauma, and disruption of intercostal nerves
Presence of chest tube(s)
Cancer invasion of pleura, chest wall

Possibly evidenced by

Verbal reports of discomfort
Guarding of affected area
Distraction behaviors, e.g., restlessness
Narrowed focus (withdrawal)
Changes in BP, heart/respiratory rate

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Pain Level (NOC)

Report pain relieved/controlled.
Appear relaxed and sleep/rest appropriately.
Participate in desired/needed activities.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Pain Management (NIC)</p> <p>Independent</p> <p>Ask patient about pain. Determine pain characteristics, e.g., continuous, aching, stabbing, burning. Have patient rate intensity on a 0–10 scale.</p> <p>Assess patient’s verbal and nonverbal pain cues.</p> <p>Note possible pathophysiological and psychological causes of pain.</p> <p>Evaluate effectiveness of pain control. Encourage sufficient medication to manage pain; change medication or time span as appropriate.</p> <p>Encourage verbalization of feelings about the pain.</p>	<p>Helpful in evaluating cancer-related pain symptoms, which may involve viscera, nerve, or bone tissue. Use of rating scale aids patient in assessing level of pain and provides tool for evaluating effectiveness of analgesics, enhancing patient control of pain.</p> <p>Discrepancy between verbal/nonverbal cues may provide clues to degree of pain, need for/effectiveness of interventions.</p> <p>Fear, distress, anxiety, and grief over confirmed diagnosis of cancer can impair ability to cope. In addition, a posterolateral incision is more uncomfortable for patient than an anterolateral incision. The presence of chest tubes can greatly increase discomfort.</p> <p>Pain perception and pain relief are subjective, thus pain management is best left to patient’s discretion. If patient is unable to provide input, the nurse should observe physiological and nonverbal signs of pain and administer medications on a regular basis.</p> <p>Fears/concerns can increase muscle tension and lower threshold of pain perception. (Refer to ND: Fear/Anxiety [specify level], following.)</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Pain Management (NIC)</p> <p>Independent</p> <p>Provide comfort measures, e.g., frequent changes of position, back rubs, support with pillows. Encourage use of relaxation techniques, e.g., visualization, guided imagery, and appropriate diversional activities.</p> <p>Schedule rest periods, provide quiet environment.</p> <p>Assist with self-care activities, breathing/arm exercises, and ambulation.</p> <p>Collaborative</p> <p>Assist with patient-controlled analgesia (PCA) or analgesia through epidural catheter. Administer intermittent analgesics routinely as indicated, especially 45–60 min before respiratory treatments, deep-breathing/coughing exercises.</p>	<p>Promotes relaxation and redirects attention. Relieves discomfort and augments therapeutic effects of analgesia.</p> <p>Decreases fatigue and conserves energy, enhancing coping abilities.</p> <p>Prevents undue fatigue and incisional strain. Encouragement and physical assistance/support may be needed for some time before patient is able or confident enough to perform these activities because of pain or fear of pain.</p> <p>Maintaining a constant drug level avoids cyclic periods of pain, aids in muscle healing, and improves respiratory function and emotional comfort/coping.</p>

<p>NURSING DIAGNOSIS: Fear/Anxiety [specify level]</p> <p>May be related to</p> <ul style="list-style-type: none"> Situational crises Threat to/change in health status Perceived threat of death <p>Possibly evidenced by</p> <ul style="list-style-type: none"> Withdrawal Apprehension Anger Increased pain, sympathetic stimulation Expressions of denial, shock, guilt, insomnia <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Fear Control/Anxiety Control (NOC)</p> <ul style="list-style-type: none"> Acknowledge and discuss fears/concerns. Demonstrate appropriate range of feelings and appear relaxed/resting appropriately. Verbalize accurate knowledge of situation. Report beginning use of individually appropriate coping strategies.
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ACTIONS/INTERVENTIONS	RATIONALE
<p>Anxiety Reduction (NIC)</p> <p>Independent</p> <p>Evaluate patient/SO level of understanding of diagnosis.</p> <p>Acknowledge reality of patient's fears/concerns and encourage expression of feelings.</p> <p>Provide opportunity for questions and answer them honestly. Be sure that patient and care providers have the same understanding of terms used.</p> <p>Accept, but do not reinforce, patient's denial of the situation.</p> <p>Note comments/behaviors indicative of beginning acceptance and/or use of effective strategies to deal with situation.</p> <p>Involve patient/SO in care planning. Provide time to prepare for events/treatments.</p> <p>Provide for patient's physical comfort.</p>	<p>Patient and SO are hearing and assimilating new information that includes changes in self-image and lifestyle. Understanding perceptions of those involved sets the tone for individualizing care and provides information necessary for choosing appropriate interventions.</p> <p>Support may enable patient to begin exploring/dealing with the reality of cancer and its treatment. Patient may need time to identify feelings and even more time to begin to express them.</p> <p>Establishes trust and reduces misperceptions/misinterpretation of information</p> <p>When extreme denial or anxiety is interfering with progress of recovery, the issues facing patient need to be explained and resolutions explored.</p> <p>Fear/anxiety will diminish as patient begins to accept/deal positively with reality. Indicator of patient's readiness to accept responsibility for participation in recovery and to "resume life."</p> <p>May help restore some feeling of control/independence to patient who feels powerless in dealing with diagnosis and treatment.</p> <p>It is difficult to deal with emotional issues when experiencing extreme/persistent physical discomfort.</p>

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

May be related to

Lack of exposure, unfamiliarity with information/resources
 Information misinterpretation
 Lack of recall

Possibly evidenced by

Statements of concern; request for information
 Inadequate follow-through of instruction
 Inappropriate or exaggerated behaviors, e.g., hysterical, hostile, agitated, apathetic

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Knowledge: Disease Process (NOC)

Verbalize understanding of ramifications of diagnosis, prognosis, possible complications.
 Participate in learning process.

Knowledge: Treatment Regimen (NOC)

Verbalize understanding of therapeutic regimen.
 Correctly perform necessary procedures and explain reasons for the actions.
 Initiate necessary lifestyle changes.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Teaching: Disease Process (NIC)</p> <p>Independent</p> <p>Discuss diagnosis, current/planned therapies, and expected outcomes.</p> <p>Reinforce surgeon's explanation of particular surgical procedure, providing diagram as appropriate. Incorporate this information into discussion about short-/long-term recovery expectations.</p> <p>Discuss necessity of planning for follow-up care before discharge.</p> <p>Identify signs/symptoms requiring medical evaluations, e.g., changes in appearance of incision, development of respiratory difficulty, fever, increased chest pain, changes in appearance of sputum.</p>	<p>Provides individually specific information, creating knowledge base for subsequent learning regarding home management. Radiation or chemotherapy may follow surgical intervention, and information is essential to enable the patient/SO to make informed decisions.</p> <p>Length of rehabilitation and prognosis depend on type of surgical procedure, preoperative physical condition, and duration/degree of complications.</p> <p>Follow-up assessment of respiratory status and general health is imperative to assure optimal recovery. Also provides opportunity to readdress concerns/questions at a less stressful time.</p> <p>Early detection and timely intervention may prevent/minimize complications.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Teaching: Disease Process (NIC)</p> <p>Independent</p> <p>Help patient determine activity tolerance and set goals.</p> <p>Evaluate availability/adequacy of support system(s) and necessity for assistance in self-care/home management.</p> <p>Recommend alternating rest periods with activity and light tasks with heavy tasks. Stress avoidance of heavy lifting, isometric/strenuous upper body exercise. Reinforce physician's time limitations about lifting.</p> <p>Recommend stopping any activity that causes undue fatigue or increased shortness of breath.</p> <p>Encourage inspection of incisions. Review expectations for healing with patient.</p> <p>Instruct patient/SO to watch for/report places in incision that do not heal or reopening of healed incision, any drainage (bloody or purulent), localized area of swelling with redness or increased pain that is hot to touch.</p> <p>Suggest wearing soft cotton shirts and loose-fitting clothing, cover/pad portion of incision as indicated, leave incision open to air as much as possible.</p> <p>Shower in warm water, washing incision gently. Avoid tub baths until approved by physician.</p> <p>Support incision with Steri-Strips as needed when sutures/staples are removed.</p> <p>Instruct in/provide rationale for arm/shoulder exercises. Have patient/SO demonstrate exercises. Encourage following graded increase in number/intensity of routine repetitions.</p>	<p>Weakness and fatigue should decrease as lung(s) heals and respiratory function improves during recovery period, especially if cancer was completely removed. If cancer is advanced, it is emotionally helpful for patient to be able to set realistic activity goals to achieve optimal independence.</p> <p>General weakness and activity limitations may reduce individual's ability to meet own needs.</p> <p>Generalized weakness and fatigue are usual in the early recovery period but should diminish as respiratory function improves and healing progresses. Rest and sleep enhance coping abilities, reduce nervousness (common in this phase), and promote healing. <i>Note:</i> Strenuous use of arms can place undue stress on incision because chest muscles may be weaker than normal for 3–6 months following surgery.</p> <p>Exhaustion aggravates respiratory insufficiency.</p> <p>Healing begins immediately, but complete healing takes time. As healing progresses, incision lines may appear dry, with crusty scabs. Underlying tissue may look bruised and feel tense, warm, and lumpy (resolving hematoma).</p> <p>Signs/symptoms indicating failure to heal, development of complications requiring further medical evaluation/intervention.</p> <p>Reduces suture line irritation and pressure from clothing. Leaving incisions open to air promotes healing process and may reduce risk of infection.</p> <p>Keeps incision clean, promotes circulation/healing. <i>Note:</i> "Climbing" out of tub requires use of arms and pectoral muscles, which can put undue stress on incision.</p> <p>Aids in maintaining approximation of wound edges to promote healing.</p> <p>Simple arm circles and lifting arms over the head or out to the affected side are initiated on the first or second postoperative day to restore normal range of motion (ROM) of shoulder and to prevent ankylosis of the affected shoulder.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Teaching: Disease Process (NIC)</p> <p>Independent</p> <p>Stress importance of avoiding exposure to smoke, air pollution, and contact with individuals with URIs.</p> <p>Review nutritional/fluid needs. Suggest increasing protein and use of high-calorie snacks as appropriate.</p> <p>Identify individually appropriate community resources, e.g., American Cancer Society, visiting nurse, social services, home care.</p>	<p>Protects lung(s) from irritation and reduces risk of infection.</p> <p>Meeting cellular energy requirements and maintaining good circulating volume for tissue perfusion facilitate tissue regeneration/healing process.</p> <p>Agencies such as these offer a broad range of services that can be tailored to provide support and meet individual needs.</p>

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

- Airway Clearance, ineffective—increased amount/viscosity of secretions, restricted chest movement/pain, fatigue/weakness.
 - Pain, acute—surgical incision, tissue trauma, disruption of intercostal nerves, presence of distress/anxiety.
 - Self-Care deficit—decreased strength/endurance, presence of pain, intolerance to activity, depression, presence of therapeutic devices, e.g., IV lines.
- Refer to CP, Cancer for other considerations.**