

ANEMIAS (IRON DEFICIENCY, PERNICIOUS, APLASTIC, HEMOLYTIC)

Anemia is a symptom of an underlying condition, such as loss of blood components, inadequate elements, or lack of required nutrients for the formation of blood cells, that results in decreased oxygen-carrying capacity of the blood. There are numerous types of anemias with various causes. The following types of anemia are discussed here: iron deficiency (ID), the result of inadequate absorption or excessive loss of iron; pernicious (PA), the result of a lack of the intrinsic factor essential for the absorption of vitamin B₁₂; aplastic, due to failure of bone marrow; and hemolytic, due to red blood cell (RBC) destruction. Nursing care for the anemic patient has a common theme even though the medical treatments vary widely.

CARE SETTING

Treated at the community level, except in the presence of severe cardiovascular/immune compromise.

RELATED CONCERNS

AIDS

Burns: thermal/chemical/electrical (acute and convalescent phases)

Cancer

Cirrhosis of the liver

Heart failure: Chronic

Psychosocial aspects of care

Renal failure: acute

Renal failure: chronic

Rheumatoid arthritis

Pulmonary tuberculosis (TB)

Upper gastrointestinal/esophageal bleeding

Patient Assessment Database

ACTIVITY/REST

- May report:** Fatigue, weakness, general malaise
Loss of productivity; diminished enthusiasm for work
Low exercise tolerance
Greater need for rest and sleep
- May exhibit:** Tachycardia/tachypnea; dyspnea on exertion or at rest (severe or aplastic anemia)
Lethargy, withdrawal, apathy, lassitude, and lack of interest in surroundings
Muscle weakness and decreased strength
Ataxia, unsteady gait
Slumping of shoulders, drooping posture, slow walk, and other cues indicative of fatigue

CIRCULATION

- May report:** History of chronic blood loss, e.g., chronic gastrointestinal bleeding, heavy menses (ID);
angina, heart failure (HF) (due to increased cardiac workload)
History of chronic infective endocarditis
Palpitations (compensatory tachycardia)
- May exhibit:** Blood pressure (BP): Increased systolic with stable diastolic and a widened pulse pressure;
postural hypotension
Dysrhythmias, electrocardiogram abnormalities, e.g., ST-segment depression and
flattening or depression of the T wave; tachycardia
Throbbing carotid pulsations (reflects increased cardiac output as a compensatory
mechanism to provide oxygen/nutrients to cells)
Systolic murmur (ID)

Extremities (color): Pallor of the skin and mucous membranes (conjunctiva, mouth, pharynx, lips) and nailbeds, or grayish cast in black patients; waxy, pale skin (aplastic, PA) or bright lemon yellow (PA)
Sclera blue or pearl white (ID); jaundice (PA)
Capillary refill delayed (diminished blood flow to the periphery and compensatory vasoconstriction)
Nails brittle, spoon-shaped (koilonychia) (ID)

EGO INTEGRITY

May report: Negative feelings about self, ability to handle situation/events
May exhibit: Depression

ELIMINATION

May report: History of pyelonephritis, renal failure
Flatulence, malabsorption syndrome (ID)
Hematemesis, fresh blood in stool, melena
Diarrhea or constipation
Diminished urine output

May exhibit: Abdominal distension

FOOD/FLUID

May report: Decreased dietary intake, low intake of animal protein/high intake of cereal products (ID)
Mouth or tongue pain, difficulty swallowing (ulcerations in pharynx)
Nausea/vomiting, dyspepsia, anorexia
Recent weight loss

May exhibit: Insatiable craving or pica for ice, dirt, cornstarch, paint, clay, and so forth (ID)
Beefy red/smooth appearance of tongue (PA; folic acid and vitamin B₁₂ deficiencies)
Dry, pale mucous membranes
Skin turgor poor with dry, shriveled appearance/loss of elasticity (ID)
Stomatitis and glossitis (deficiency states)
Lips: Cheilitis, i.e., inflammation of the lips with cracking at the corners of the mouth (ID)

HYGIENE

May report: Difficulty maintaining activities of daily living (ADLs)

May exhibit: Unkempt appearance, poor personal hygiene
Hair dry, brittle, thinning; premature graying (PA)

NEUROSENSORY

May report: Headaches, fainting, dizziness, vertigo, tinnitus, inability to concentrate
Insomnia, dimness of vision, and spots before eyes
Weakness, poor balance, wobbly legs; paresthesias of hands/feet (PA); claudication
Sensation of being cold

May exhibit: Irritability, restlessness, depression, drowsiness, apathy
Mentation: Notable slowing and dullness in response
Ophthalmic: Retinal hemorrhages (aplastic, PA)
Epistaxis, bleeding from other orifices (aplastic)
Disturbed coordination, ataxia; decreased vibratory and position sense, positive Romberg's sign, paralysis (PA)

PAIN/DISCOMFORT

May report: Vague abdominal pains; headache (ID)
Oral pain

RESPIRATION

May report: History of TB, lung abscesses
Shortness of breath at rest and with activity

May exhibit: Tachypnea, orthopnea, and dyspnea

SAFETY

- May report:** History of occupational exposure to chemicals, e.g., benzene, lead, insecticides, phenylbutazone, naphthalene
History of exposure to radiation either as a treatment modality or by accident
History of cancer, cancer therapies
Cold and/or heat intolerance
Previous blood transfusions
Impaired vision
Poor wound healing, frequent infections
- May exhibit:** Low-grade fever, chills, night sweats
Generalized lymphadenopathy
Petechiae and ecchymosis (aplastic)

SEXUALITY

- May report:** Changes in menstrual flow, e.g., menorrhagia or amenorrhea in women (ID)
Loss of libido (men and women)
Impotence in men
- May exhibit:** Pale cervix and vaginal walls

TEACHING/LEARNING

- May report:** Family tendency for anemia (ID, PA)
Past/present use of anticonvulsants, antibiotics, chemotherapeutic agents (bone marrow failure), aspirin, anti-inflammatory drugs, or anticoagulants
Chronic use of alcohol
Religious/cultural beliefs affecting treatment choices, e.g., refusal of blood transfusions
Recent/current episode of active bleeding (ID)
History of liver, renal disease; hematologic problems; celiac or other malabsorption disease; regional enteritis; tapeworm manifestations; polyendocrinopathies; autoimmune problem (e.g., antibodies to parietal cells, intrinsic factor, thyroid and T-cell antibodies)
Prior surgeries, e.g., splenectomy; tumor excision; prosthetic valve replacement; surgical excision of duodenum or gastric resection, partial/total gastrectomy (ID, PA)
History of problems with wound healing or bleeding; chronic infections, chronic granulomatous disease, or cancer (secondary anemias)
- Discharge plan** **DRG projected mean length of inpatient stay: 4.3 days or depending on type/cause of anemia and severity of complications**
- considerations:** May require assistance with treatment (injections); self-care activities and/or homemaker/maintenance tasks; changes in dietary plan
Refer to section at end of plan for postdischarge considerations.

DIAGNOSTIC STUDIES

Complete blood count (CBC):

Hemoglobin (Hb) and hematocrit (Hct): Decreased in anemias and overhydration caused by excessive IV fluids, bleeding problems, bone marrow suppression.

Erythrocyte (RBC) count: Decreased (PA), severely decreased (aplastic); mean corpuscular volume (MCV) and mean corpuscular hemoglobin (MCH) decreased and microcytic with hypochromic erythrocytes (ID), elevated (PA); pancytopenia (aplastic).

Stained RBC examination: Detects changes in color and shape (may indicate particular type of anemia).

Reticulocyte count: Varies; helps assess bone marrow function, e.g., decreased (PA, cirrhosis, folic acid deficiency, bone marrow failure, radiation therapy); elevated (blood loss/hemolysis, leukemias, compensated anemias).

White blood cells (WBCs): Total cell count and specific WBCs (differential) may be increased (hemolytic) or decreased (aplastic).

Platelet count: Decreased (aplastic); elevated (ID); normal or high (hemolytic).

Erythrocyte sedimentation rate (ESR): Elevation indicates presence of inflammatory reaction, e.g., increased RBC destruction or malignant disease.

RBC survival time: Useful in the differential diagnosis of anemias because RBCs have shortened life spans in pernicious and hemolytic anemias.

Erythrocyte fragility test: Decreased (ID); increased fragility confirms hemolytic and autoimmune anemias.
Hemoglobin electrophoresis: Identifies type of hemoglobin structure, aids in determining source of hemolytic anemia.
Serum folate and vitamin B₁₂: Aids in diagnosing anemias related to deficiencies in dietary intake/malabsorption.
Serum iron: Absent (ID); elevated (hemolytic, aplastic).
Serum total iron-binding capacity (TIBC): Increased (ID); normal or slightly reduced (AP).
Serum ferritin: Decreased (ID).
Serum bilirubin (unconjugated): Elevated (PA, hemolytic).
Serum lactate dehydrogenase (LDH): May be elevated (PA).
Bleeding time: Prolonged (aplastic).
Schilling's test: Decreased urinary excretion of vitamin B₁₂ (PA).
Guaiac: May be positive for occult blood in urine, stools, and gastric contents, reflecting acute/chronic bleeding (ID).
Gastric analysis: Decreased secretions with elevated pH and absence of free HCl (PA).
Bone marrow aspiration/biopsy examination: Cells may show changes in number, size, and shape, helping to differentiate type of anemia, e.g., increased megaloblasts (PA); fatty marrow with diminished or absence of blood cells at several sites (aplastic).
Endoscopic and radiographic studies: Checks for bleeding sites, e.g., acute/chronic gastrointestinal (GI) bleeding.

NURSING PRIORITIES

1. Enhance tissue perfusion.
2. Provide nutritional/fluid needs.
3. Prevent complications.
4. Provide information about disease process, prognosis, and treatment regimen.

DISCHARGE GOALS

1. ADLs met by self or with assistance of others.
2. Complications prevented/minimized.
3. Disease process/prognosis and therapeutic regimen understood.
4. Plan in place to meet needs after discharge.

NURSING DIAGNOSIS: Activity intolerance

May be related to

Imbalance between oxygen supply (delivery) and demand

Possibly evidenced by

Weakness and fatigue

Reports of decreased exercise/activity tolerance

Greater need for sleep/rest

Palpitations, tachycardia, increased BP/respiratory response with minor exertion

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Endurance (NOC)

Report an increase in activity tolerance (including ADLs).

Demonstrate a decrease in physiological signs of intolerance, e.g., pulse, respirations, and BP remain within patient's normal range.

Display laboratory values, e.g., Hb/Hct, within acceptable range.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Energy Management (NIC)</p> <p>Independent</p> <p>Assess patient's ability to perform normal tasks/ADLs, noting reports of weakness, fatigue, and difficulty accomplishing tasks.</p> <p>Note changes in balance/gait disturbance, muscle weakness.</p> <p>Monitor BP, pulse, respirations during and after activity. Note adverse responses to increased levels of activity(e.g., increased heart rate [HR]/BP, dysrhythmias, dizziness, dyspnea, tachypnea, cyanosis of mucous membranes/nailbeds).</p> <p>Recommend quiet atmosphere; bedrest if indicated. Stress need to monitor and limit visitors, phone calls, and repeated unplanned interruptions.</p> <p>Elevate head of bed as tolerated.</p> <p>Suggest patient change position slowly; monitor for dizziness.</p> <p>Assist patient to prioritize ADLs/desired activities. Alternate rest periods with activity periods. Write out schedule for patient to refer to.</p> <p>Provide/recommend assistance with activities/ambulation as necessary, allowing patient to do as much as possible.</p> <p>Plan activity progression with patient, including activities that patient views as essential. Increase activity levels as tolerated.</p> <p>Identify/implement energy-saving techniques, e.g., shower chair, sitting to perform tasks.</p> <p>Instruct patient to stop activity if palpitations, chest pain, shortness of breath, weakness, or dizziness occur.</p> <p>Discuss importance of maintaining environmental temperature and body warmth as indicated.</p>	<p>Influences choice of interventions/needed assistance.</p> <p>May indicate neurological changes associated with vitamin B₁₂ deficiency, affecting patient safety/risk of injury.</p> <p>Cardiopulmonary manifestations result from attempts by the heart and lungs to supply adequate amounts of oxygen to the tissues.</p> <p>Enhances rest to lower body's oxygen requirements, and reduces strain on the heart and lungs.</p> <p>Enhances lung expansion to maximize oxygenation for cellular uptake. <i>Note:</i> May be contraindicated if hypotension is present.</p> <p>Postural hypotension or cerebral hypoxia may cause dizziness, fainting, and increased risk of injury.</p> <p>Promotes adequate rest, maintains energy level, and alleviates strain on the cardiac and respiratory systems.</p> <p>Although help may be necessary, self-esteem is enhanced when patient does some things for self.</p> <p>Promotes gradual return to normal activity level and improved muscle tone/stamina without undue fatigue. Increases self-esteem and sense of control.</p> <p>Encourages patient to do as much as possible, while conserving limited energy and preventing fatigue.</p> <p>Cellular ischemia potentiates risk of infarction and excessive cardiopulmonary strain/stress may lead to decompensation/failure.</p> <p>Vasoconstriction (shunting of blood to vital organs) decreases peripheral circulation, impairing tissue perfusion. Patient's comfort/need for warmth must be balanced with need to avoid excessive heat with resultant vasodilation (reduces organ perfusion).</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Energy Management (NIC)</p> <p>Collaborative</p> <p>Monitor laboratory studies, e.g., Hb/Hct and RBC count, arterial blood gases (ABGs).</p> <p>Provide supplemental oxygen as indicated.</p> <p>Administer as indicated: Colony-stimulating factors (CSFs), e.g., aldesleukin (Interleukin-2);</p> <p>Whole blood/packed RBCs (PRCs), blood products as indicated. Monitor closely for transfusion reactions.</p> <p>Prepare for surgical intervention if indicated.</p>	<p>Identifies deficiencies in RBC components affecting oxygen transport and treatment needs/response to therapy.</p> <p>Maximizing oxygen transport to tissues improves ability to function.</p> <p>CSFs may be given to stimulate growth of specific blood elements.</p> <p>Increases number of oxygen-carrying cells; corrects deficiencies to reduce risk of hemorrhage in acutely compromised individuals. <i>Note:</i> Transfusions are reserved for severe blood loss anemias with cardiovascular compromise; used after other therapies have failed to restore homeostasis.</p> <p>Bone marrow transplant may be done in presence of bone marrow failure/aplastic anemia.</p>

<p>NURSING DIAGNOSIS: Nutrition: imbalanced, less than body requirements</p> <p>May be related to</p> <p>Failure to ingest or inability to digest food/absorb nutrients necessary for formation of normal RBCs</p> <p>Possibly evidenced by</p> <p>Weight loss/weight below normal for age, height, and build</p> <p>Decreased triceps skin-fold measurement</p> <p>Changes in gums, oral mucous membranes</p> <p>Decreased tolerance for activity, weakness, and loss of muscle tone</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Nutritional Status (NOC)</p> <p>Demonstrate progressive weight gain or stable weight, with normalization of laboratory values.</p> <p>Experience no signs of malnutrition.</p> <p>Demonstrate behaviors, lifestyle changes to regain and/or maintain appropriate weight.</p>
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ACTIONS/INTERVENTIONS	RATIONALE
<p>Nutrition Therapy (NIC)</p> <p>Independent</p> <p>Review nutritional history, including food preferences.</p>	<p>Identifies deficiencies, suggests possible interventions.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Nutrition Therapy (NIC)</p>	
<p>Independent</p>	
<p>Observe and record patient's food intake.</p>	<p>Monitors caloric intake or insufficient quality of food consumption.</p>
<p>Weigh periodically as appropriate (e.g., weekly).</p>	<p>Monitors weight loss and effectiveness of nutritional interventions.</p>
<p>Recommend small, frequent meals and/or between-meal nourishment.</p>	<p>May reduce fatigue and thus enhance intake while preventing gastric distension. Use of Ensure/Isomil or similar product provides additional protein and calories.</p>
<p>Suggest bland diet, low in roughage, avoiding hot, spicy, or very acidic foods as indicated.</p>	<p>When oral lesions are present, pain may restrict type of foods patient can tolerate.</p>
<p>Have patient record and report occurrence of nausea/vomiting, flatus, and other related symptoms such as irritability or impaired memory.</p>	<p>May reflect effects of anemias (hypoxia, vitamin B₁₂ deficiency) on organs.</p>
<p>Encourage/assist with good oral hygiene; before and after meals, use soft-bristled toothbrush for gentle brushing. Provide dilute, alcohol-free mouthwash if oral mucosa is ulcerated.</p>	<p>Enhances appetite and oral intake. Diminishes bacterial growth, minimizing possibility of infection. Special mouth-care techniques may be needed if tissue is fragile/ulcerated/bleeding and pain is severe.</p>
<p>Collaborative</p>	
<p>Consult with dietitian.</p>	<p>Aids in establishing dietary plan to meet individual needs.</p>
<p>Monitor laboratory studies, e.g., Hb/Hct, blood urea nitrogen (BUN), prealbumin/albumin, protein, transferrin, serum iron, vitamin B₁₂, folic acid, TIBC, serum electrolytes.</p>	<p>Evaluates effectiveness of treatment regimen, including dietary sources of needed nutrients.</p>
<p>Administer medications as indicated, e.g.:</p>	
<p>Vitamin and mineral supplements, e.g., cyanocobalamin (vitamin B₁₂), folic acid (Folvite), ascorbic acid (vitamin C);</p>	<p>Replacements needed depend on type of anemia and/or presence of poor oral intake and identified deficiencies.</p>
<p>Oral iron supplements, e.g., ferrous sulfate (Feosol, Mol-Iron, Fer-In-Sol), ferrous gluconate (Fergon), ferrous fumarate (Irongon, Femiron);</p>	<p>May be useful in some types of iron deficiency anemias. Oral preparations are taken between meals to enhance absorption and usually correct anemia and replace iron stores over a period of several months.</p>
<p>Iron dextran (InFeD) IM/IV;</p>	<p>Administered until estimated deficit is corrected. Reserved for those who cannot absorb or comply with oral iron therapy or when blood loss is too rapid for oral replacement to be effective.</p>
<p>Antifungal or anesthetic mouthwash, if indicated.</p>	<p>May be needed in the presence of stomatitis/glossitis to promote oral tissue healing and facilitate intake.</p>

NURSING DIAGNOSIS: Constipation/Diarrhea

May be related to

Decreased dietary intake; changes in digestive processes
Drug therapy side effects

Possibly evidenced by

Changes in frequency, characteristics, and amount of stool
Nausea/vomiting, decreased appetite
Reports of abdominal pain, urgency, cramping
Altered bowel sounds

DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:

Bowel Elimination (NOC)

Establish/return to normal patterns of bowel functioning.
Demonstrate changes in behaviors/lifestyle, as necessitated by causative, contributing factors.

ACTIONS/INTERVENTIONS	RATIONALE
Bowel Management (NIC)	
Independent	
Determine stool color, consistency, frequency, and amount.	Assists in identifying causative/contributing factors and appropriate interventions.
Auscultate bowel sounds.	Bowel sounds are generally increased in diarrhea and decreased in constipation.
Monitor intake and output (I&O) with specific attention to food/fluid intake.	May identify dehydration, excessive loss of fluids or aid in identifying dietary deficiencies.
Encourage fluid intake of 2500–3000 mL/day within cardiac tolerance.	Assists in improving stool consistency if constipated. Helps maintain hydration status if diarrhea is present.
Recommend avoiding gas-forming foods.	Decreases gastric distress and abdominal distension.
Assess perianal skin condition frequently, noting changes or beginning breakdown. Encourage/assist with perineal care after each bowel movement (BM) if diarrhea is present.	Prevents skin excoriation and breakdown.
Discuss use of stool softeners, mild stimulants, bulk-forming laxatives, or enemas as indicated. Monitor effectiveness.	Facilitates defecation when constipation is present.

ACTIONS/INTERVENTIONS	RATIONALE
<p>Bowel Management (NIC)</p> <p>Collaborative</p> <p>Consult with dietitian to provide well-balanced diet high in fiber and bulk.</p> <p>Administer antidiarrheal medications, e.g., diphenoxylate hydrochloride with atropine (Lomotil), and water-absorbing drugs, e.g., Metamucil.</p>	<p>Fiber resists enzymatic digestion and absorbs liquids in its passage along the intestinal tract and thereby produces bulk, which acts as a stimulant to defecation.</p> <p>Decreases intestinal motility when diarrhea is present.</p>

<p>NURSING DIAGNOSIS: Infection, risk for</p> <p>Risk factors may include</p> <p>Inadequate secondary defenses, e.g., decreased hemoglobin, leukopenia, or decreased granulocytes (suppressed inflammatory response)</p> <p>Inadequate primary defenses, e.g., broken skin, stasis of body fluids; invasive procedures; chronic disease, malnutrition</p> <p>Possibly evidenced by</p> <p>[Not applicable; presence of signs and symptoms establishes an <i>actual</i> diagnosis.]</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Risk Control (NOC)</p> <p>Identify behaviors to prevent/reduce risk of infection.</p> <p>Immune Status (NOC)</p> <p>Be free of signs of infection, achieve timely wound healing (if present).</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Infection Protection (NIC)</p> <p>Independent</p> <p>Perform/promote meticulous handwashing by caregivers and patient.</p> <p>Maintain strict aseptic techniques with procedures/wound care.</p> <p>Provide meticulous skin, oral, and perianal care.</p> <p>Encourage frequent position changes/ ambulation, coughing, and deep-breathing exercises.</p>	<p>Prevents cross-contamination/bacterial colonization. <i>Note:</i> Patient with severe/aplastic anemia may be at risk from normal skin flora.</p> <p>Reduces risk of bacterial colonization/infection.</p> <p>Reduces risk of skin/tissue breakdown and infection.</p> <p>Promotes ventilation of all lung segments and aids in mobilizing secretions to prevent pneumonia.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Infection Protection (NIC)</p> <p>Independent</p> <p>Promote adequate fluid intake.</p> <p>Stress need to monitor/limit visitors. Provide protective isolation if appropriate. Restrict live plants/cut flowers.</p> <p>Monitor temperature. Note presence of chills and tachycardia with/without fever.</p> <p>Observe for wound erythema/drainage.</p> <p>Collaborative</p> <p>Obtain specimens for culture/sensitivity as indicated.</p> <p>Administer topical antiseptics; systemic antibiotics.</p>	<p>Assists in liquefying respiratory secretions to facilitate expectoration and prevent stasis of body fluids (e.g., respiratory and renal).</p> <p>Limits exposure to bacteria/infections. Protective isolation may be required in aplastic anemia, when immune response is most compromised.</p> <p>Reflective of inflammatory process/ infection, requiring evaluation and treatment. <i>Note:</i> With bone marrow suppression, leukocytic failure may lead to fulminating infections.</p> <p>Indicators of local infection. <i>Note:</i> Pus formation may be absent if granulocytes are depressed.</p> <p>Verifies presence of infection, identifies specific pathogen, and influences choice of treatment.</p> <p>May be used prophylactically to reduce colonization or used to treat specific infectious process.</p>

<p>NURSING DIAGNOSIS: Knowledge, deficient [Learning Need] regarding condition, prognosis, treatment, self-care, and discharge needs</p> <p>May be related to</p> <p>Lack of exposure/recall Information misinterpretation Unfamiliarity with information resources</p> <p>Possibly evidenced by</p> <p>Questions; request for information; statement of misconception Inaccurate follow-through of instructions, development of preventable complications</p> <p>DESIRED OUTCOMES/EVALUATION CRITERIA—PATIENT WILL:</p> <p>Knowledge: Illness Care (NOC)</p> <p>Verbalize understanding of the nature of the disease process, diagnostic procedures, and potential complications. Identify causative factors. Verbalize understanding of therapeutic needs. Initiate necessary behaviors/lifestyle changes.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Teaching: Disease Process (NIC)</p> <p>Independent</p> <p>Provide information about specific anemia and explain that therapy depends on the type and severity of the anemia.</p> <p>Discuss effects of anemias on preexisting conditions.</p> <p>Review purpose and preparations for diagnostic studies.</p> <p>Explain that blood taken for laboratory studies will not worsen anemia.</p> <p>Review required diet alterations to meet specific dietary needs (determined by type of anemia/deficiency).</p> <p>Assess resources (e.g., financial) and ability to obtain/prepare food).</p> <p>Encourage cessation of smoking.</p> <p>Provide information about purpose, dosage, schedule, precautions and potential side effects, interactions, and adverse reactions to all prescribed medications.</p> <p>Stress importance of reporting signs of fatigue, weakness, paresthesias, irritability, impaired memory.</p> <p>Instruct and demonstrate self-administration of oral iron preparations:</p> <p> Discuss importance of taking only prescribed dosages;</p> <p> Advise taking with meals or immediately after meals;</p> <p> Dilute liquid preparations (preferably with orange juice) and administer through a straw;</p>	<p>Provides knowledge base from which patient can make informed choices. Allays anxiety and may promote cooperation with therapeutic regimen.</p> <p>Anemias aggravate heart, lung, and cerebrovascular disease.</p> <p>Anxiety/fear of the unknown increases stress level, which in turn increases the cardiac workload. Knowledge of what to expect can diminish anxiety.</p> <p>This is often an unspoken concern that can potentiate patient's anxiety.</p> <p>Red meat, liver, egg yolks, green leafy vegetables, whole wheat bread, and dried fruits are sources of iron. Green vegetables, whole grains, liver, and citrus fruits are sources of folic acid and vitamin C (enhances absorption of iron).</p> <p>Inadequate resources may affect ability to purchase/prepare appropriate food items.</p> <p>Smoking decreases available oxygen and causes vasoconstriction.</p> <p>Information enhances cooperation with regimen. Recovery from anemias can be slow, requiring lengthy treatment and prevention of secondary complications.</p> <p>Indicates that anemia is progressing or failing to resolve, necessitating further evaluation/treatment changes.</p> <p>Iron replacement usually takes 3–6 mo, whereas vitamin B₁₂ injections may be necessary for the rest of patient's life.</p> <p>Overdose of iron medication can be toxic.</p> <p>Iron is best absorbed on an empty stomach. However, iron salts are gastric irritants and may cause dyspepsia, diarrhea, and abdominal discomfort if taken on an empty stomach.</p> <p>Undiluted liquid iron preparations may stain the teeth. Ascorbic acid promotes iron absorption.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Teaching: Disease Process (NIC)</p> <p>Independent</p> <p>Caution that BM may appear greenish black/tarry;</p> <p>Emphasize importance of good oral hygiene measures.</p> <p>Instruct patient/SO about parenteral iron administration, e.g.:</p> <p>Z-track administration of medication;</p> <p>Use separate needles for withdrawing and injecting the medication;</p> <p>Caution regarding possible systemic reaction, (e.g., flushing, vomiting, nausea, myalgia) and discuss importance of reporting symptoms.</p> <p>Discuss increased susceptibility to infections, signs/symptoms requiring medical intervention, e.g., fever, sore throat; erythema/draining wound; cloudy urine, burning with urination.</p> <p>Identify safety concerns, e.g., avoidance of forceful blowing of nose, contact sports, constipation/straining for stool; use of electric razors, soft toothbrush.</p> <p>Recommend avoiding use of heating pads or hot water bottles; measuring temperature of bath water with a thermometer.</p> <p>Recommend routine observation of skin, noting changes in turgor, altered color, local warmth, erythema, excoriation.</p> <p>Identify measures for healthy skin, e.g.:</p> <p>Reposition periodically and gently massage bony surfaces when sedentary or in bed;</p> <p>Keep skin surfaces dry and clean, limit use of soap;</p> <p>Engage regularly in range of motion (ROM) exercises;</p>	<p>Excretion of excessive iron changes stool color.</p> <p>Certain iron supplements (e.g., Feosol) may leave deposits on teeth and gums.</p> <p>Prevents extravasation (leaking) with accompanying pain and tissue damage.</p> <p>Medication may stain the skin.</p> <p>Possible side effects of therapy requiring reevaluation of drug choice and dosage.</p> <p>Decreased leukocyte production potentiates risk of infection. <i>Note:</i> Purulent drainage may not form in absence of granulocytes (aplastic).</p> <p>Reduces risk of hemorrhage from fragile tissues and general decrease of coagulation factors.</p> <p>Thermoreceptors in the dermal tissues may be dulled because of oxygen deprivation, thus increasing the risk of thermal injury.</p> <p>Condition of the skin is affected by circulation, nutrition, and immobility. Tissues may become fragile and prone to infection and breakdown.</p> <p>Increases circulation to all skin areas, limiting tissue ischemia/effects of cellular hypoxia.</p> <p>Moist, contaminated areas provide excellent media for growth of pathogenic organisms. Soap may dry excessively and increase irritation.</p> <p>Promotes circulation to tissues, prevents stasis.</p>

ACTIONS/INTERVENTIONS	RATIONALE
<p>Reality Orientation (NIC)</p> <p>Independent</p> <p>Suggest use of protective devices, e.g., sheepskin, egg-crate, alternating air pressure/water mattress, heel/elbow protectors, and pillows as indicated.</p> <p>Review good oral hygiene, necessity for regular dental care.</p> <p>Instruct to avoid use of aspirin products.</p> <p>Refer to appropriate community resources when indicated, e.g., social services for food stamps, Meals on Wheels.</p>	<p>Avoids skin breakdown by preventing/reducing pressure against skin surfaces.</p> <p>Effects of anemia (oral lesions) and/or iron supplements increase risk of infection/bacteremia.</p> <p>Increases bleeding tendencies.</p> <p>May need assistance with groceries/meal preparation.</p>

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

Activity intolerance—imbalance between oxygen supply (delivery) and demand.

Nutrition: imbalanced, less than body requirements—failure to ingest or inability to digest food/absorb nutrients necessary for formation of normal RBCs.

Infection, risk for—inadequate secondary defenses, e.g., decreased hemoglobin, leukopenia, or decreased granulocytes (suppressed inflammatory response); inadequate primary defenses, e.g., broken skin, stasis of body fluids; invasive procedures; chronic disease, malnutrition.

Therapeutic Regimen: ineffective management—economic difficulties, perceived benefits.