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Medical-Surgical Nursing Pocket Reference



All information was obtained from evidence-based resources.
Please make sure the information aligns with your organization's
policies and procedures.

Brief Head to Toe Assessment



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Brief Head to Toe Assessment for Medical-Surgical Patients

Assessment Area	Data
General Safety Survey	Assess: Bed Position, call bell/personal belongings in reach, fall alarms/hazards? Tools/Scales: Fall Risk assessment scale
Vital Signs	Review/Obtain: Temperature, pulse, respirations, BP, oxygen saturation, pain Ask: Are you having any pain now? If yes, is it new or have you had it before?
Mental Status	Assess: Level of consciousness, orientation to person, place, time and circumstances Tools/Scales: bCAM assessment if delirium suspected (See bCAM reference)
Head, eyes, ears, nose, throat, neck	Assess: Eyes, pupils, mouth, speech, carotid arteries, swallowing; face color, moisture Assistive devices: ensure glasses, hearing aids are in place and functional
Chest anterior/posterior	Assess: chest skin color, moisture, lesions; quality of respirations (depth, effort, and symmetry) and lung sounds; heart sounds, pulse quality Ask: Have you been coughing? If yes, is it a dry or productive cough? Sputum?
Abdomen	Assess: Bowel sounds; skin color, moisture, lesions. Inspect and palpate for distention, pain and/or discomfort Ask: When was the last time you had something to eat or drink? When was the last time you moved your bowels and/or urinated? What did the output look like.
Upper and lower extremities	Assess: Skin color, temperature, pulses, tenderness, edema, capillary refill, strength, sensation, range movement
Activity	Assess: patient ability to move, sit on the side of bed, and/or ambulate Assistive devices: Are crutches, cane and/or walker in reach? Ask: When was the last time you were out of bed? What kind of activity have you been doing? Do you need help with toileting?
Therapeutic devices	Assess: peripheral and central vascular access devices and dressings. Supplemental oxygen settings, pulse oximetry , cardiac monitoring, gastric tubes, chest tubes, wound dressings, braces, slings Ask: Are any of these causing you discomfort?

Brief Confusion Assessment Method (bCAM)

1. Acute Onset/Fluctuating Course:

Is there a history of an acute change in mental status with evidence of fluctuation in the degree of symptoms?

2. Inattention:

Does the patient have difficulty focusing attention (e.g., easily distractible, unable to focus on discussion, and/or sustain effort)?

3. Disorganized Speech:

Is the patient's speech disorganized or incoherent such as rambling or irrelevant conversation, unclear or illogical flow of ideas, or unpredictable switching of subjects?

4. Altered Level of Consciousness:

Is the patient's level of alertness either hyper-alert (e.g., vigilant, overly sensitive to environmental stimuli, easily startles) or hypo-alert (e.g., lethargic, stuporous, drowsy, difficult to arouse)?

If 1 and 2 are present along with 3 and/or 4, then delirium is present.

Adapted from:

Inouye, S.K, Van Dyck, C.H., Alessi, C.A., Balkin, S., Siegel, A.P., Horowitz, R. I. (1990). Clarifying confusion: The confusion assessment method. A new method for detecting delirium. *Annals of Internal Medicine*, 113 (12), 941-8. doi: 10.7326/0003-4819-113-12-941



Acute Respiratory Distress Syndrome (ARDS)



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Acute Respiratory Disease Syndrome (ARDS)

- Occurs because of trauma to the body causing fluid to collect in the aveoli, depriving organs of oxygen
- Common “trauma” seen in Medical-Surgical patients:
 - post auto accident (or other traumatic event)
 - infection
 - critically ill or vulnerable post-op patients
- Symptoms: severe dyspnea, anxiety, restlessness, BP, confusion – *all come on quickly*
- Assessment: severe tachypnea, productive cough, with pink frothy sputum, crackles and rhonchi throughout all lung fields, ABG reveals reduced O₂ saturation
- Treatment: supplemental oxygen, ventilator, inotropics, bronchodilators, steroids, antibiotics or antivirals

What is the difference between ARDS and Pulmonary Edema?

Pulmonary Edema (cardiogenic)

- Cause – often caused by congestive heart failure
- Symptoms: dyspnea, fear, patient states feeling of doom
- Assessment findings: crackles – initially at the bases, then progress throughout patients chest; eventually as the patient coughs or exhales you may see a pink, frothy sputum
- Treatment: morphine, oxygen, diuretics, inotropics, ventilator support
 - Oxygen first – face mask at 100% preferred; may eventually require ventilator support
 - Diuretics
 - Morphine –dilates the peripheral bed and slows down the perfusion thus decreasing the amount of blood trying to get into the lungs
 - Inotropics – positive inotropes strengthen the force of the heart contraction to treat the left ventricular failure caused by PE

Cardiovascular

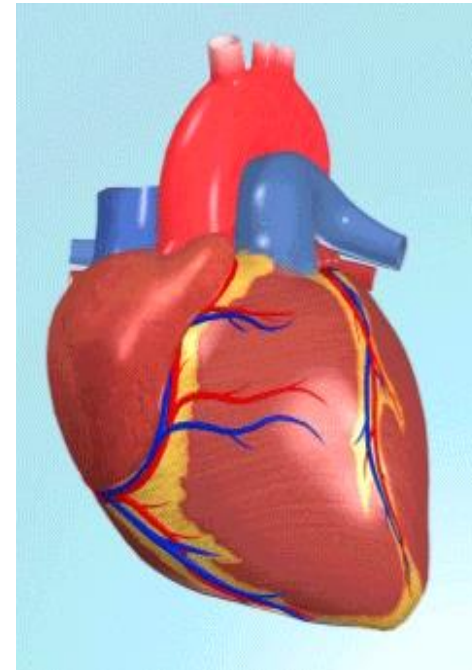


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Heart Failure

- Broad term for the inability of the heart to pump sufficient blood to meet the body's oxygen and nutrient requirements
 - When the kidneys don't get perfused, the renin angiotensin system is activated causing vasoconstriction – leads to hypertension
- Common Causes
 - MI
 - Coronary Artery Disease
 - Long-standing, uncontrolled HTN
 - Cardiomyopathies
 - Valvular Disease
 - Atrial and Ventricular tachydysrhythmias



Clinical Manifestations of Heart Failure

Left Ventricular Failure

- Orthopnea
- Dyspnea upon exertion
- Crackles
- S3 S4
- Systolic murmur
- Fatigue
- Activity intolerance

Right Ventricular Failure

- JVD
- Dependent edema
- Hepatomegaly
- Abdominal distention
- Fatigue
- Activity intolerance

Medical and Nursing Management

- Decrease the workload of the heart (Beta blockers)
- Decrease preload and afterload (Nitrates, ACE inhibitors, ARBs, diuretics, Morphine)
- Increase myocardial contractility (Cardiac glycosides [digoxin])
- Treat the underlying cause
- Patient and family education

Peripheral Vascular Disease

- Caused by atherosclerosis or thrombus
- Risk factors – smoking, high cholesterol, diabetes
- Types
 - Arterial (PAD): Results in lack of oxygen to tissues
 - Loss of hair, extremities pale and cool
 - Tx: thrombolytics, stents, bypass
 - Venous (PVD): Results in inability to remove waste products
 - Edema, wounds that won't heal
 - Tx: anti-platelets, diuretics

Anticoagulation Strategies

Anti-platelet Aggregates	<ul style="list-style-type: none">● Aspirin● Clopidogrel (Plavix)● Ticagrelor (Brilanta)
Indirect Thrombin Inhibitor	<ul style="list-style-type: none">● Heparin● Low molecular weight heparins (enoxaparin)
Anticoagulants	<ul style="list-style-type: none">● Warfarin
Direct Oral Anticoagulants (DOACs)	<ul style="list-style-type: none">● Dabigatran (Pradaxa)● Rivaroxaban (Xarelto)● Apixaban (Eliquis)



Cardiac Medications

Drug Class	Commonly Use Drugs (generic)	Commonly Used Drugs (brand)	Action
Anticoagulants	coumadin heparin apixaban dabigatran rivaroxaban edoxaban	Warfarin Heparin Eliquis Pradaxa Xarelto Savaysa	Decreases the clotting (coagulating) ability of the blood. Sometimes called blood thinners, although they do not actually thin the blood. They do NOT dissolve existing blood clots. Used to treat certain blood vessel, heart and lung conditions.
Antiplatelet Agents and Dual Antiplatelet Therapy	aspirin clopidogrel ticagrelor prasugrel dipyridamole	Aspirin Plavix Brilinta Effient Persantine	Keeps blood clots from forming by preventing blood platelets from sticking together.
ACE (Angiotensin-Converting Enzyme) Inhibitors	lisinopril enalapril captopril benazepril ramipril	Zestril Vasotec Capoten Lotensin Altace	Expands blood vessels and decreases resistance by lowering levels of angiotensin II. Allows blood to flow more easily and makes the heart's work easier or more efficient.
ARBs (Angiotensin II Receptor Blockers)	losartan valsartan candesartan	Cozaar Diovan Atacand	Rather than lowering levels of angiotensin II (as ACE inhibitors do) angiotensin II receptor blockers prevent this chemical from having any effects on the heart and blood vessels. This keeps blood pressure from rising.
ARNIs (Angiotensin-Receptor Neprilysin) Inhibitors	sacubitril-valsartan	Entresto	Neprilysin is an enzyme that breaks down natural substances in the body that open narrowed arteries. By limiting the effect of neprilysin, it increases the effects of these substances and improves artery opening and blood flow, reduces sodium (salt) retention, and decreases strain on the heart.

Cardiac Medications

Drug Class	Commonly Use Drugs (generic)	Commonly Used Drugs (brand)	Action
Beta-Blockers	metoprolol atenolol nadolol bisoprolol	Lopressor/Toprol XL Tenormin Corgard Zebeta	Decreases the heart rate and cardiac output, which lowers blood pressure and makes the heart beat more slowly and with less force.
Calcium Channel Blockers	amlodipine diltiazem nifedipine felodipine	Norvasc Cardizem Procardia Plendil	Interrupts the movement of calcium into the cells of the heart and blood vessels. May decrease the heart's pumping strength and relax blood vessels.
Cholesterol-lowering medications	atorvastatin simvastatin pravastatin rosuvastatin ezetimibe	Lipitor Zocor Pravachol Crestor Zetia	Various medications can lower blood cholesterol levels, but drugs other than statins should only be used for patients in whom statins are not effective enough or who have serious side effects due to statin therapy. They work in the body in different ways. Some affect the liver, some work in the intestines and some interrupt the formation of cholesterol from circulating in the blood
Digitalis Preparations	digoxin	Lanoxin	Increases the force of the heart's contractions, which can be beneficial in heart failure and for irregular heartbeats.
Diuretics	hydrochlorothieide furosemide bumetanide metolazone	Esidrix/Hydrodiuril Lasix Bumex Zaroxolyn	Causes the body to rid itself of excess fluids and sodium through urination. Helps to relieve the heart's workload. Also decreases the buildup of fluid in the lungs and other parts of the body, such as the ankles and legs. Different diuretics remove fluid at varied rates and through different methods.
Vasodilators	nitroglycerin hydralazine Isosorbide mononitrate	Nitrostat/Nitrobid Apresoline Imdur	Relaxes blood vessels and increases the supply of blood and oxygen to the heart while reducing its workload. Can come in pills to be swallowed, chewable tablets and as a topical application (cream).

Fluids & Electrolytes



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Common Electrolyte Imbalances

*Normal range may differ slightly depending on laboratory equipment.

Electrolyte	Normal Range*	Hypo	Hyper
Sodium	135-145 mEq/L	<p style="text-align: center;">Hyponatremia</p> <p>Dilutional – excessive fluid intake (IV or oral), decreased serum sodium due to increased volume Symptoms – edema, increased B/P, confusion, weight gain since increased fluid, could occur with long term NG suction pulling sodium with GI fluid Treatment – reduce IV rate, decrease oral intake</p> <p>True – a true loss of sodium – burns, severe vomiting; if losing sodium, will also be losing water Symptoms – dry body tissue, decreased B/P, tachycardia Treatment – IV (0.9% NS preferred)</p>	<p style="text-align: center;">Hypernatremia</p> <p>Causes - Fluid loss causing increased serum sodium most likely (could be increased intake but not a common cause), high fevers, fluid level decrease because not able to drink fluid or IV amount being given inadequate Symptoms – dry tissue, thirst, tachycardia, tachypnea Treatment – decrease sodium intake from IV or oral, increase fluid volume</p>

Common Electrolyte Imbalances

Electrolyte	Normal Range*	Hypo	Hyper
Potassium	3.5 – 5 mEq/L	<p>Hypokalemia</p> <p>Causes – vomiting, diarrhea, prolonged NG suction, K+ wasting diuretics</p> <p>Symptoms – with a loss of potassium muscle cells begin to lose muscle tone. Arrhythmias that occur because of the tonicity property of cardiac cells trying to maintain muscle tone, decreased peristalsis leading to constipation</p> <p>Treatment – potassium IV or oral</p>	<p>Hyperkalemia</p> <p>Causes – cell wall destruction releasing K+, renal failure, acidosis</p> <p>Symptoms – potassium is an irritant to muscles leading to muscle contraction, arrhythmias (tall tented T-wave may be seen on EKG), GI cramping and/or diarrhea, skeletal muscle twitching</p> <p>Treatment – limit K+ intake, Kayexalate, IV regular insulin (may then also need IV glucose)</p>
Magnesium	1.3 – 2.1 mEq/L	<p>Hypomagnesemia</p> <p>Cause – poor intake usually</p> <p>Symptoms – hyperactive deep tendon reflexes</p> <p>Treatment – Magnesium IV</p>	<p>Hypermagnesemia</p> <p>Cause – usually poor renal excretion</p> <p>Symptoms – decreased deep tendon reflexes</p> <p>Treatment – if acute may need dialysis, antidote is calcium gluconate</p>
Calcium	9 – 10.5 mEq/L	<p>Hypocalcemia</p> <p>Causes – renal disease, pregnancy, decreased intake</p> <p>Symptoms – hyperactive deep tendon reflexes</p> <p>Treatment – Calcium gluconate IV, increase calcium intake</p>	<p>Hypercalcemia</p> <p>Causes - hyperparathyroidism, thiazide diuretics, excessive intake of Vitamin D</p> <p>Symptoms – sedation, lethargy, hypoactive reflexes, increased clotting potential</p> <p>Treatment – magnesium the antidote, decrease intake</p>

Common Lab Tests – Normal Values

Note: Clinical laboratories have different reference ranges

Value	Normal Range	Unit
COMPLETE BLOOD COUNT		
Red Blood Cell (RBC)	M: 4.5—5.5 F: 4.0—4.9	x10 ⁵ /ml
White Blood Cell (WBC)	4,500—10,000	cells/mcL
Platelets	100,000—450,000	cells/mcL
Hemoglobin (Hgb)	M: 13.5—16.5 F: 12.0—15.0 Pregnant: 10—15	g/dL
Hematocrit (Hct)	M: 41—50% F: 36—44%	
Mean Corpuscular Volume (MCV)	80—100	fL

Value	Normal Range	Unit
SERUM ELECTROLYTES		
Sodium (Na ⁺)	135—145	mEq/L
Potassium (K ⁺)	3.5—5.5	mEq/L
Chloride (Cl ⁻)	95—105	mEq/L
Calcium	8.5—10.9	mEq/L
Calcium, ionized	2.24—2.46	mEq/L
Magnesium (Mg)	1.5—2.5	mEq/L
Phosphorus (P)	2.5—4.5	mEq/L

Common Lab Tests – Normal Values

Note: Clinical laboratories have different reference ranges

Value	Normal Range	Unit
CHEMISTRY VALUES		
Glucose	Adults: 70—110	mg/dL
Blood Urea Nitrogen (BUN)	Adults: 7—18 Child: 5—20 Infant: 5—15	mg/dL
Serum Creatinine	0.6—1.35	mg/dL
Creatine phosphokinase (CPK)	21—198	units/L
Creatinine Clearance (CrCl)	F: 85—132 M: 90—138	mL/min
Albumin	3.4—5.0	g/dL
Bilirubin	<1.0	mg/dL
Uric Acid	3.5—7.5	mg/dL

Value	Normal Range	Unit
LIPOPROTEINS AND TRIGLYCERIDES		
Total Cholesterol	Ideal: below 200 Borderline: 200—240 High: above 240	mg/dL
Low Density Lipoprotein (LDL)	<70	mg/dL
High Density Lipoprotein (HDL)	<60	mg/dL
Triglycerides	Normal: below 150 Borderline high: 150—199 High: 200—499 Very high: above 500	mg/dL

Diabetes



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Diabetes Mellitus

	Type 1	Type 2
Previous terminology	Insulin-dependent diabetes mellitus (IDDM), type I, juvenile-onset diabetes	Non-insulin-dependent diabetes mellitus, type II, adult-onset diabetes
Age of onset	Usually <30 yr, particularly childhood and adolescence, but any age	Usually >40 yr, but any age
Genetic predisposition	Moderate; environmental factors required for expression; 35%-50% concordance in identical twins; several candidate genes proposed	Strong; 60%-90% concordance in identical twins; many candidate genes proposed; some genes identified in maturity-onset diabetes of the young
Precipitating and risk factors	Largely unknown; microbial, chemical, dietary, other	Age, obesity (central), sedentary lifestyle, previous gestational diabetes
Pathogenesis	Autoimmune destruction of β cells	Insulin resistance; impaired insulin secretion
Blood (endogenous) insulin levels	Low or absent	Normal or increased
Clinical Management	Insulin, diet	Diet, exercise, oral agents, insulin
Acute complication	Ketoacidosis	Hyperosmolar hyperglycemic non-ketoacidosis (HHNK), coma

Key Points for Care of the Patient with Diabetes

- As those with Type 1 DM age, their disease may present symptoms that are a mixture of Type 1 and Type 2.
- Ketoacidosis is less prevalent in those with Type 2; Hyperosmolar hyperglycemic non-ketoacidosis (HHNK) leads to blood glucose levels >600 and severe dehydration that will cause death if untreated.
- The goal during hospitalization for adults with diabetes is to maintain blood glucose levels between 130 and 180 mg/dl.

Goals for Insulin:

Mimic Normal Body Response to Glucose & Insulin

- Fasting: 100–126 mg/dl
- Pre-prandial: 70–130 mg/dl
- Post-prandial: < 200 mg/dl
- Hb A1c (A1C): < 7.0%, but individualized for the person

HbA1c	Blood Glucose
6%	~ 120 mg/dL
6.5%	~ 135 mg/dL
7%	~ 150 mg/dL
8%	~ 180 mg/dL
9%	~ 210 mg/dL
10%	~ 240 mg/dL

Diabetic Ketoacidosis (DKA)

Causes

- No Insulin; Patient either omits Insulin dose or is not taking enough to cover the body's needs (Steroids, Infections, STRESS)
 - Without Insulin, body has no “key” to open cell membrane for glucose to enter
 - Cell begins to use fat stores for energy which releases acids (ketones)
 - METABOLIC ACIDOSIS
 - Cell exchanges H⁺ for K⁺; plasma becomes Hyperkalemic

Emergency – DIABETIC KETOACIDOSIS!

Symptoms:

- Polyuria, Polyphagia, Polydipsia (dehydration)
- Heart dysrhythmias (↑ K⁺)
- Muscular irritability (N/V, GI cramping)
- Kussmaul respirations:
 - rapid, deep
 - respiratory compensation for metabolic acidosis
 - smells “fruity” or “sweet”
- Fatigue, headache, may lead to coma
- Once blood glucose is more than 250 mg/dL, acidosis is creating symptoms

Diabetic Ketoacidosis (DKA)

Treatment

- Fluid resuscitation
 - Hypovolemic shock
- Insulin
 - Continuous infusion or frequent subQ injections
- Do not treat hyperkalemia unless life threatening.
 - Usually resolves with hydration and insulin
 - Will probably need K⁺ replacement after hyperglycemia treated

Death

- Can be caused by metabolic acidosis or heart dysrhythmias from hyperkalemia
- Usually recognized and treated early

Hyperosmolar, Hyperglycemic, Nonketotic Syndrome (HHNK)

Causes

- Not ENOUGH Insulin!!!
- Patient has enough insulin to prevent acidosis, but becomes profoundly hyperglycemic
- No acidosis, so no immediate symptoms
- Diabetes may be unknown to person until hospitalized for HHNK

Death

- Caused by
 - Dehydration leading to heart attack or stroke
 - Hypovolemic shock
- Higher than DKA (can be as high as 50%)

Hyperosmolar, Hyperglycemic, Nonketotic Syndrome (HHNK)

Symptoms

- Polyuria, Polyphagia, Polydipsia (dehydration)
- Fatigue, headache, may lead to coma
- Blood glucose is more than 600 mg/dL

Treatment

- Fluid resuscitation
 - Hypovolemic shock
 - Primary problem is dehydration
- Insulin
- Watch fluid/electrolytes
 - Will change when hydration happens

Hypoglycemia

Signs & Symptoms

- BS < 70 mg/dl
- 1st Symptoms – (ANS)
 - Shakiness
 - Diaphoresis
 - Palpitations
 - Nausea
- 2nd Symptoms – (Neurologic)
 - Slurred Speech, Decreased LOC/Coma
 - Impaired Thought Process, Irritability
- Brain needs glucose not insulin
- Risk for coma



Treatment

- 10–15 grams fast acting carbohydrates
 - Oral: glucose gel or juice
 - NPO:
 - 25ml D50 IVP or
 - 12.5-25ml Glucagon IM
- To prevent rebound hypoglycemia
 - 1 complex carbohydrate + 1 protein
 - Juice followed by milk
 - Graham crackers with peanut butter
- Use caution with renal patients

Diabetes Complications & Treatment Goals

Complications

- Associated with longer length of stay, increased acuity and increased readmissions
- Cardiovascular Disease (inflammation causes worsening of atherosclerosis *everywhere*)
- Chronic Kidney Disease
- Neuropathies
- Retinopathies
- Increased risk of infection
- Increased incidence of “polypharmacy”

Treatment Goals

- Glucose management
 - Use/understanding of glucose monitor
 - Diet/meal planning – weight management
 - Medication management
- Lifestyle changes:
 - Exercise
 - Decreased alcohol consumption
- “Sick Day” management
- Foot care
 - Shoes that FIT—no rubbing spots
 - Check feet with a mirror (especially w/Neuropathy)
- Annual dilated eye exam, microalbumin, and lipid profile (LDL < 100 mg/dL)

Care and Assessment of the Geriatric Patient



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Key Points for Care of the Geriatric Patient

- Normal changes associated with aging are differentiated from abnormal decline, and health is to be separated from illness.
- Older adults are more likely to have multiple chronic medical conditions.
- The pharmacokinetics and pharmacodynamics of drugs often differ in older adults due to changes in metabolism and shifts in protein and fluid status. The general rule to follow is “start low and go slow.”
- Nurses can improve patient outcomes by implementing early interventions for problems common among older adults, in particular, skin breakdown, falls, delirium, dehydration, and poor nutritional intake.

Adapted from: Roman, M. (2016). Care of the Geriatric Patient, *Core Curriculum for Medical-Surgical Nursing, 5th Edition*. Academy of Medical Surgical Nurses.



Typical physiologic changes associated with aging

Modify Assessment

Increased prevalence of multiple chronic conditions, decline in physical function, psychological issues, and social issues require modification of traditional assessment.

These conditions are common, preventable, and may signal a need for more in-depth assessment. The presence of these conditions, alone or in combination, can lead to increased death rates, higher costs, and longer hospitalizations in elderly patients.

SPICES is an acronym for the common syndromes of the elderly requiring nursing intervention.

This easily remembered acronym can be used to recall the common problems of the elderly population in all clinical settings. It is a useful tool for assessing older adults.

The SPICES tool focuses on six “marker conditions” in older adults rather than on the primary diagnosis for which a patient is hospitalized.

Sleep Disorders

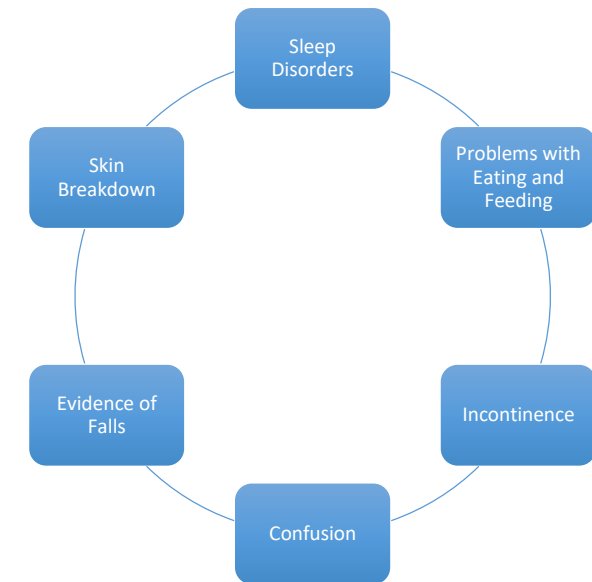
Problems with Eating and Feeding

Incontinence

Confusion

Evidence of Falls

Skin Breakdown



Atypical clinical manifestations of commonly occurring illnesses

1. Myocardial infarction
 - a. Chest pain uncommon
 - b. Most common signs: restlessness and confusion
2. Pneumonia
 - a. Dyspnea
 - b. Confusion (chest pain not common)
3. Pulmonary embolism
 - a. Dyspnea
 - b. Early signs are restlessness and confusion
4. Urinary tract infection
 - a. Most common indication: confusion
 - b. Urinary frequency and incontinence also may occur

Altered Cognition in the Geriatric Patient



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Depression: not a normal physiologic change of aging but rather, a treatable medical illness.

Change in prior level of functioning with some of the following presentations:

- Depressed mood
- Diminished interest or pleasure from most activities
- Anorexia and weight loss
- Sleep disturbance
- Psychomotor agitation or retardation
- Fatigue
- Feelings of worthlessness
- Memory impairment with diminished ability to think, concentrate, or make decisions.

Symptoms of depression affect 10%-15% of older persons in the community and are prevalent in 38% of hospital and long-term care patients.

Risk for suicide: Persons > 65 years of age commit suicide at a higher rate than any other age group (one of the top 10 causes of death in the elderly).

Other medical problems that could cause depression include substance misuse, endocrinopathies, chronic pain, neurologic disorders, ESRD.

Delirium: acute confusion state with an abrupt onset that can develop over hours.

Incidence and prevalence estimates in hospitalized elderly range between 14% and 80%. Postoperative delirium: most common complication with incidence ranging from 15%-72%

Common Causes are infection, hypoxia, metabolic abnormalities, medications/chemical intoxication or withdrawal

Contributing and aggravating factors are hospital admission, change in environment, sensory deprivation/overload, feelings of loss of control/independence and physical restraints

Nursing Assessment recommended is the Brief Confusion Assessment Method (bCAM) which provides a standardized method to identify delirium quickly and accurately. Features that make up the assessment include (1) acute onset or fluctuating course, (2) inattention, (3) disorganized speech/thinking, and (4) altered level of consciousness. Diagnosis of delirium by bCAM requires the presence of features 1 and 2 and either 3 or 4.

Nursing interventions should focus on managing factors that can be alleviated (sleep deprivation and noise, pain, immobilization, night lights, decreased stimuli, frequent reorientation, hearing aids in place and working, glasses, use of familiar objects from home [pictures, tapes], using foley catheter only if absolutely necessary.

Dementia: affects 50% of those over 85 years!

The most common type is Alzheimer's disease (primary degenerative dementia) with the second most common type being multi-infarct dementia associated with cardiovascular disease.

Stages:

❑ **Early stage**

- Characterized by forgetfulness, apathy, and social withdrawal. Often realize they have trouble remembering and attempt to hide memory loss.
- Nursing interventions focus on reality orientation and activities to stimulate cognition, education, supportive counseling, referral to a support group, and assistance with completion of advance directives.

❑ **Middle stage**

- Major gaps in memory and deficits in cognitive function emerge. Disorientation to time and place; language disturbance; may experience disruption of normal sleep/waking cycle; personality and behavior changes; impaired judgment, some assistance with day-to-day activities becomes essential.
- Nursing interventions focus on helping with getting dressed, handling details of toileting (flushing toilet, wiping and disposing of tissue properly, incontinence) and close observation, as they tend to wander.

❑ **Late stage**

- Lose ability to respond to the environment, speak, and ultimately, control movement; incontinence of urine; reflexes become abnormal and muscles grow rigid; swallowing is impaired.
- Assess caregiver burden and presence of verbal or physically abusive behaviors.
- Nursing interventions focus on development of a routine for exercise and daytime activities, help with eating and toileting, assistance with walking and sitting without support.

Early Warning Score System

Early Warning Score Systems (EWSS) were developed to assist with identifying deteriorating patients in an effort to prevent failure to rescue. There are many different versions available, including ones specific to certain patient populations. If your organization has not implemented a standardized tool, the version below has been integrated into the electronic medical record at a large southeastern academic medical center and validated over the last two years.



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Calculating a MEWS Score

The Modified Early Warning Score (MEWS) uses 7 discrete data elements to calculate a score.

The physiologic elements are:

1. Temperature
2. Pulse
3. Systolic Blood Pressure
4. Respiratory Rate
5. Mental Status
6. O2 Saturation
7. Inspired O2

Step 1. Obtain a complete set of vital signs on the patient and assess mental status

Step 2: Score the physiologic elements based on the following matrix.

Criteria	3	2	1	0	1	2	3	Score
Temperature	≤35°C or 95°F		35.1°- 36° or 95.1°- 96.8°F	36.1°- 38°C or 96.9°-100.4°F	38.1°- 39°C or 100.5°- 102.2°F	≥39.1°C or 102.3°F		
Pulse	≤40		41-50	51-90	91-110	111-130	≥131	
Systolic BP	≤90	91-100	101-110	111-219			≥220	
Respiratory Rate	≤8		9-11	12-22		23-24	≥25	
Mental Status				Alert			Alert Responds to voice, Responds to pain, Unresponsive	
O2 Saturation	≤91	92-93	94-95	≥96				
Inspired O2				Room Air		Any Supplemental O2		
							Total Score	

Step 3: Identify next steps based on the total score

Score	Risk Level	Guidelines ***Any RN can notify the patient's attending regarding concerns or a change in status ***
0-2	Low Risk	No Interventions
3-5	Medium Risk	Notify Charge Nurse of elevated risk Perform assessments, vital signs and MEWS every 4 hours
6-7	High Risk	Notify Charge Nurse and Primary MD – Document response Increase assessments, vital signs and MEWS to every 2 hours or as needed If increase to High Risk for 3 consecutive reading, notify Rapid Response Team if interventions have not been effective or acute change is evident Special consideration for patients with “allow natural death,” “do not resuscitate” and/or “comfort care” orders
≥8	Critical	Notify Charge Nurse and Primary MD Activate the rapid response team for patient evaluation Increase assessments, vital signs and MEWS to every 2 hours or as needed MD consults with ICU physician and Charge Nurse to determine disposition: remain in current location, increase level of care to intermediate (stepdown), or move to intensive care unit.