Form and Exercise Handouts Provided to Supplement

YOU CAN TEACH ADVANCED MED–SURG NURSING!

The Authoritative Guide and Toolkit for the ADVANCED Medical–Surgical Nursing Clinical Instructor

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Contents

Instructor Contracts and Evaluations

SAMPLE SELF-ASSESSMENT FORM

Name of faculty member: _____

Date: _____

Course title/number: _____

Number of students: _____

	Never	Occasionally	Usually	Always
1. Provides an up-to-date syllabus, correct assignments, and additional readings; maintains submission dates; and provides clearly-stated course objectives and goals				
2. Uses the syllabus as a tool for guiding and communicating with students				
3. Posts and maintains a communication pathway with the students by in-person meetings or university e-mail				
4. Follows school policies and procedures related to missed classes, plagiarism, and mid-semester advising				
5. Remains current with developments in nursing, and shares developments in class discussions and projects				
6. Provides timely feedback to students				

Comments:

_____

_____

_____

_____

_____

_____

SAMPLE OBSERVATION FORM

Name of faculty member: _____

Name of evaluator: _____

Date: _____

Course title/number: _____

Number of students present: _____

Category	Approaches standard (1)	Meets standard (2)	Exceeds standard (3)	Rating
Knowledge of content	Professor displays basic content and professional knowledge, but familiarity with nursing's most recent developments is not apparent.	Professor displays solid content and professional knowledge, makes appropriate connections to prior learning, and shows some familiarity with nursing's most recent developments.	Professor displays broad content knowledge and makes appropriate connections to prior learning. Professor demonstrates awareness of nursing developments and encourages students to understand and learn more about evidence-based practices.	
Objectives	Objectives are vague, conflicting, or not related to the topics addressed in class or in real-life situations.	Objectives are significant and clearly communicated to students, relate to the syllabus as well as to the topics addressed in class, have real-life implications, and show connections to current trends in nursing.	Objectives are clear, concise, and appropriately aligned to evidence-based practices. The instructor generates interest and enthusiasm in students.	
Organization of classroom	Classroom is not organized in a way that engages student learning. Professor appears unprepared for class, does not begin and end on time, vaguely explains assignments and activities, and attempts to but does not make good use of class time.	Classroom organization reflects the different modes of learning to engage student learning. Professor appears to have planned the lesson and is prepared for class, begins and ends on time, clearly communicates assignments and activities, and makes effective use of class time.	Professor is well prepared and highly organized and uses instructional knowledge and tools to maximize and encourage student learning within and beyond the classroom.Activities and discussion engage students so that there is optimal time management.	

Category	Approaches standard (1)	Meets standard (2)	Exceeds standard (3)	Rating
Appropriate teaching methods, including the use of technology	Professor does not make the best selection of instructional strategies and does not show awareness of how to teach to multiple learning styles. Instructor attempts to integrate technology and collaboration but the implementation is not effective.	Professor selects appropriate instructional strategies and implements them effectively, integrates technology and collaboration well; demonstrates an awareness of how to teach to multiple learning styles.	Professor selects instructional strategies that best match the objectives and implements them with ease, employs the use of technology and collaboration in ways that enhance learning; effectively teaches to multiple learning styles.	
Uses formal or informal assessment	Professor attempts to but does clearly determine what students have learned.	Professor uses informal and/or formal assessments to ensure that students are learning.	Professor embeds assessments in the lesson and uses them effectively to further student learning.	
Faculty interaction with students	Professor engages some but not all students in classroom activities and discussions, attempts to communicate concepts and ideas but is not always clear, and does not demonstrate concern for students.	Professor engages all students in classroom activities and discussions, communicates concepts and ideas in clear ways using professional language and logical progressions, and demonstrates respect for individuals.	Professor works with students as they explore new material, raise questions, and make connections to real-life situations; students correspond with other health professionals in a clear and organized manner; and establishes a culture of mutual respect for multiple views.	

Comments:

NURSING PROGRAM EVALUATION FORM

Preceptor: _____ Course: _____

Date: _____ Site: _____

Completed by: _____

Please circle the most appropriate answer that best describes your viewpoint regarding your preceptor experience. Space is provided after each statement if you choose to add any written comment.

1. Did the preceptor smooth the progress of the orientation process?

Never Occasionally Always

Comment: _____

2. Did the preceptor show expertise in his or her nursing role?

Never Occasionally Always

Comment: _____

3. Did the preceptor work in partnership and assist you in planning learning objectives and experiences?

Never Occasionally Always

Comment: _____

4. Did the preceptor provide immediate and appropriate feedback?

Never Occasionally Always

Comment: _____

5. Did the preceptor provide resources to the student and facilitate learning?

Never Occasionally Always

Comment: _____

6. Did the preceptor direct the student through critical thinking and decision making?

Never Occasionally Always

Comment: _____

7. Did the preceptor consider the students' limitations according to the students' level of training?

   Never Occasionally Always

   Comment: _____

8. Did the preceptor encourage questions and offer constructive comments?

   Never Occasionally Always

   Comment: _____

9. Did the preceptor use good communication skills?

   Never Occasionally Always

   Comment: _____

10. Did the preceptor exhibit a caring and respectful attitude?

    Never Occasionally Always

    Comment: _____

General Comments: Please comment on how this preceptor assisted you to develop your clinical learning experience.

1. Do you recommend this preceptor for other students?

   YES NO

   Why or why not? _____

2. Did this clinical setting provide accommodation of learning activities for student learning:

   YES NO

   Why or why not? _____

3. Were the course objectives realistic, and how could they be improved?

_____

4. The following worked well in this clinical: _____

_____

(*continued*)

NURSING PROGRAM EVALUATION FORM (***continued***)

5. The following did not work well in this clinical: _____

_____

Do not sign your name. Thank you for your comments.

CLINICAL FACILITY EVALUATION FORM

Name of clinical facility:

Course:

Completed by: ☐ Student ☐ Faculty

Please circle the most appropriate answer that best describes your opinion regarding the clinical site. Space is provided after each statement if you choose to add any additional comments.

1. Was this clinical agency pertinent to the expected clinical experience?

Never Occasionally Always

Comment: _____

2. Were the facilities adequate and available to achieve the clinical objectives?

Never Occasionally Always

Comment: _____

3. Were there sufficient and appropriate learning opportunities available to meet the objectives?

Never Occasionally Always

Comment: _____

4. Was there an adequate number of patients to meet the learning objectives?

Never Occasionally Always

Comment: _____

5. Were the types of patients varied in terms of age, types of problems, and so on?

   Never Occasionally Always

   Comment: _____

6. Was the support staff helpful and accepting of students?

   Never Occasionally Always

   Comment: _____

7. Were instructional materials and community resources available to supplement learning (i.e., pamphlets, outside-class opportunities, etc.)?

   Never Occasionally Always

   Comment: _____

8. Were the philosophy, the mission, and the goals of the clinical site relevant to caring?

   Never Occasionally Always

9. Were the philosophy, the mission, and the goals of the clinical site relevant to health promotion and disease prevention?

   Never Occasionally Always

10. Were the philosophy, the mission, and the goals of the clinical site relevant to sociocultural diversity?

    Never Occasionally Always

11. Were the philosophy, the mission, and the goals of the clinical site relevant to safe practices and competent patient care?

    Never Occasionally Always

12. How far did you travel from home to the clinical site?

    Mileage: _____

13. How accessible was the site to public transportation?

    Distance: _____

(*continued*)

CLINICAL FACILITY EVALUATION FORM (***continued***)

General Comments:

1. List ways in which this clinical site provided a good clinical experience for the student:

   _____

2. List areas in which this clinical site might need improvement in order to provide optimal student learning:

   _____

3. Do you suggest this clinical site for other students?

   YES NO

   Why or why not? _____

   _____

   If you are a member of the faculty, please sign and date.

   Signature: _____ Date: _____

   If additional space is needed, please use the back of this sheet.

Effective Student Evaluations

ANECDOTAL NOTES FORM

Student: _____

Date	Students must be able to discuss the patient's medical diagnosis, laboratory values, medications, tests, and treatments. Compare with the textbook content. Students must be able to list nursing diagnoses in order of priority, discuss nursing interventions and rationales, and perform nursing care safely and professionally.	
	Patient initials:	Student initials:
	Patient initials:	Student initials:
	Patient initials:	Student initials:
	Patient initials:	Student initials:
	Patient initials:	Student initials:

Learning Requirements and Syllabus Preparation

SKILLS CHECKLIST FOR MEDICAL–SURGICAL CLINICAL

Student: _____

Instructor: _____

Skill	Date	Pass/Fail	Remediation
Verify order Patient record Assess steps and materials needed for procedure			
Identify, gather, and prepare equipment and supplies			
Obtain appropriate equipment: Stethoscope, thermometer, probe cover, age-appropriate blood pressure cuff, pulse oximetry, watch, Dynamap charting, flow sheets			
Vital signs			
▪ Pulse rate, quality, rhythm, and appropriate sites ▪ Respiratory rate and quality ▪ Blood pressure: Manual and palpation ▪ Blood pressure: Electronic Dynamap ▪ auscultation ▪ Temperature: Axilla, oral, rectal, tympanic ▪ Pulse oximetry (O_2 saturation) and factors that change O_2 saturation ▪ Observe for condition or change in condition			
Instruction			

▪ Perioperative care and mobility
▪ Preoperative preparation and consents
▪ Postoperative teaching
▪ Postanesthesia care
▪ Positioning:
  ▪ Supine, prone, lateral, jack-knife, lithotomy, and Fowler's
  ▪ Trendelenburg/reverse Trendelenburg
Time out/boarding pass
Preprocedure shave/skin prep
Checklist for surgery			

Safety			
Restraints/safety devices: Ordering, applying, releasing extremities involved, behavior, and care of patient (nutrition, circulation, elimination) Fall prevention, care of confused patient, patient education and documentation, reporting			

Skill	Date	Pass/Fail	Remediation
Health history interview			
▪ Biographical and demographic information ▪ Current health problem ▪ Height and weight **Symptom analysis** ▪ Onset, location, duration, characteristic, associated manifestation, radiation, and treatment ▪ Past health history, surgical history, family health history ▪ Health care maintenance ▪ Medication use ▪ Domestic violence			
Psychosocial history			

▪ Risk factors, assessment, appearance, motor activity, behavior, mental status, levels of consciousness, orientation, mood (subjective description) and affect (observable, outward demeanor)
▪ Speech, communication, thought processes and content, social history (personal habits), occupational exposure, life stressors, and lifestyle (socioeconomic factors)
  ▪ Sexuality
  ▪ Learning preferences: Visual, auditory, or other
  ▪ Health beliefs: Assessment (cause of illness)
  ▪ Health promotion and health-risk appraisal
  ▪ Review of systems
  ▪ Cultural assessment: Language and communication process, level of ethnic identity, influence of religion, views about discrimination, network support, habits, customs and beliefs			

Physical assessment			
The student will perform the examination using inspection, auscultation, palpation, and percussion in appropriate order **Skin, hair, nails** ▪ Color of skin, scars, rashes, or lesions ▪ Clubbing ▪ Lice or scabs ▪ Texture of hair **Eyes, vision** ▪ Symmetry and alignment ▪ Abnormalities in eyelids ▪ Eyebrow distribution ▪ Observation of sclera and conjunctiva ▪ Symmetry of pupil and iris ▪ Extra-ocular movements and cranial nerves ▪ Constriction and accommodation of both pupils			

(*continued*)

SKILLS CHECKLIST FOR MEDICAL–SURGICAL CLINICAL (*continued*)

Skill	Date	Pass/Fail	Remediation
Ears ▪ Drainage/symmetry			
Nose and sinuses ▪ Color ▪ Drainage ▪ Loss of smell ▪ Pain over sinuses			
Mouth and throat ▪ Symmetry ▪ Color of mucosa ▪ Tongue dysfunction ▪ Teeth ▪ Parotid gland			
Neck and neck vessels ▪ Jugular venous ▪ Distention ▪ Enlargement of cervical nodes ▪ Thyroid assessment ▪ Carotid auscultation			
Lungs ▪ Breathing patterns ▪ Use of accessory muscles ▪ Skin and nail-bed color ▪ Ability to speak ▪ Adventitious sounds ▪ Spine abnormalities ▪ Palpation ▪ Tactile fremitus ▪ Percussion			
Heart ▪ Observation ▪ Jugular venous distension (JVD) ▪ Point of maximal impulse (PMI) ▪ Auscultation ▪ Clicks, murmurs, rubs, aortic, pulmonic, tricuspid, mitral valve closure			
Breast and axilla (male and female) ▪ Anatomy and symmetry ▪ Any masses, drainage, pain, discoloration ▪ Palpation ▪ Lymph nodes			

Skill	Date	Pass/Fail	Remediation
Abdomen ▪ Color of skin, scars, rashes or lesions ▪ Abdominal contour, symmetry, and position of umbilicus ▪ Umbilical herniation and enlarged inguinal lymph nodes or massesBowel sounds in all quadrants ▪ Presence of bruits, ascites ▪ Percussion ▪ Palpation findings ▪ Rectum (hemorrhoids, fissures, prolapse) **Musculoskeletal** ▪ Inspect overall appearance ▪ Observe gait and balance ▪ Perform Romberg test ▪ Observe spine from lateral and posterior curvatures ▪ Palpate along spine ▪ Inspect and palpate skin, joints, and muscle groups of upper and lower extremities ▪ Joint abnormalities ▪ Test muscle strength and range of motion of all limbs ▪ Check pulses ▪ Inspect hair distribution and skin discoloration on legs ▪ Identify presence of edema **Neurologic** ▪ Mental status testing ▪ Cranial nerve testing ▪ Muscle strength ▪ Level of consciousness (LOC): Glasgow Coma Scale ▪ Affect, mood, and memory ▪ Are cranial nerves intact? ▪ Gait, balance, and coordination in upper and lower extremities ▪ Findings of sensory testing: Light touch and sharp and dull discrimination ▪ Deep tendon reflexes and Babinski reflex **Genitourinary** ▪ Male: Any drainage, bulges in inguinal area, any penile or scrotal abnormalities, any skin abnormalities, opening of the urethra ▪ Female: Any drainage, vaginal abnormalities, prolapse, opening of the urethra **General assessment** Appropriate use of instrumentation Assessment of older adult			

(*continued*)

SKILLS CHECKLIST FOR MEDICAL–SURGICAL CLINICAL (*continued*)

Skill	Date	Pass/Fail	Remediation
Infection control			
▪ Hand washing, antibacterial soap application ▪ Standard/universal precautions ▪ Clean gloving ▪ Sterile gloving ▪ Sharps disposal ▪ Contaminated material disposal ▪ Isolation technique (masking, gowning, and gloving for contact, droplet, enteric, reverse, and airborne isolation) ▪ Surgical asepsis ▪ Sterile technique/sterile field ▪ Cleaning bodily fluid spills, ▪ Using material safety data sheet (MSDS) **Toileting** ▪ Use of bedpan and fracture pan ▪ Use of urinal ▪ Use of commode ▪ Measuring urinary hat ▪ Insertion of Foley catheter in male and female ▪ Care and maintenance of Foley, supra pubic, and Texas catheter ▪ Condom catheter application ▪ Flexi-seal fecal insertion and maintenance **Hygiene** ▪ Bed bath, shower ▪ Oral care: Conscious and unconscious patient ▪ Care of dentures, retainers, bridges ▪ Shaving ▪ Shampooing and hair care ▪ Nail care ▪ Care of prosthetics (eyeglasses, contacts, eye prosthesis, hearing aid, artificial limbs) ▪ Eye, ear, and nose care			
Mobility, immobility, and positioning			
Body mechanics of the patients and students Body alignment and indications ▪ Dorsal recumbent ▪ Prone ▪ Sims' ▪ Fowler's ▪ Knee–chest			

Skill	Date	Pass/Fail	Remediation
▪ Dorsal lithotomy ▪ Turning patient every 2 hours ▪ Transferring patient using proper body mechanics to bed, stretcher, or chair ▪ Use of devices such as egg-crate mattresses, foam mattress pads, and cushions to relieve pressure sores ▪ Active and passive range of motion ▪ Ambulation ▪ Use of wheelchair, crutches, cane, walker, and Hoyer lift ▪ Maintenance of traction equipment **Bed making** ▪ Making an occupied bed, an unoccupied bed, and a postoperative bed ▪ Use of the call bell ▪ Transporting a patient **Intake & output calculations and recording** ▪ Net balance calculations **Cold and heat application** ▪ Hypothermic blanket ▪ Hyperthermia blanket (bear hugger) ▪ K-heating pad ▪ Ice packs **Genitourinary** ▪ Intermittent catheter ▪ Insertion/removal of indwelling catheter ▪ Catheter irrigation ▪ Continuous bladder irrigation ▪ Catheter care: Indwelling, condom, suprapubic ▪ Perineal care ▪ Assist with Pap smear ▪ Assist with pelvic examination **Tubes and drains** ▪ Insertion of nasogastric tube ▪ Nasogastric tube maintenance such as checking placement and gastric residual ▪ Gastrostomy tube maintenance ▪ Initiating tube feedings via tube-feeding devices such as a kangaroo pump ▪ Bolus tube feedings ▪ Maintenance of drainage collection devices: Jackson Pratt drains, Hemovac, Penrose drains **Respiratory care** ▪ Pulse oximetry ▪ Nebulizer ▪ Use of incentive spirometer (IS) ▪ Use of Ambu bag/mask ▪ Use of nasal cannula, 100% nonrebreather (NRB), and Ventimask ▪ Turn, cough, and deep breathe (TCDB) ▪ Closed chest tube drainage system to suction/water and care ▪ Chest tube insertion site care ▪ Tracheostomy care ▪ Postural drainage			

(*continued*)

SKILLS CHECKLIST FOR MEDICAL–SURGICAL CLINICAL (*continued*)

Skill	Date	Pass/Fail	Remediation
Arterial blood gas ▪ Metabolic acidosis ▪ Metabolic alkalosis ▪ Respiratory acidosis ▪ Respiratory alkalosis ▪ Tracheal, oral, and nasal suctioning and care of patient ▪ Chest physiotherapy **Bowel elimination** ▪ Enema (retention/soap suds) ▪ Selection/application of ostomy appliance ▪ Ostomy pouch care: Teaching measurement of stoma, burping, preventing infections, attaching and cleaning pouch ▪ Stoma skin prep and cleansing, application of powder ▪ Ostomy irrigation ▪ Removal of impactions ▪ Suppository			
Nutrition			
▪ Gravity feedings: Enteral gastrostomy/jejunostomy/nasogastric ▪ Insertion/maintenance of enteral feeding tube ▪ Removal of feeding tube (not gastrostomy tube) ▪ Feeding pump ▪ Feeding a patient ▪ Aspiration precautions ▪ Gastric lavage			
Wound management			
▪ Pressure ulcer prevention ▪ Clean dressing change ▪ Superficial dressing change (dry, gauze, topical wound products) ▪ Deep wound packing ▪ Wet-to-dry dressing change ▪ Sterile dressing change ▪ Wound irrigation ▪ Suture/staple/Steri-Strips removal ▪ Wound vacuum-assisted closure (VAC) maintenance ▪ Maintenance of specialty bed			

CHAPTER 4

First Day of Clinical: Expectations, Forms, and Assessments

CONTACT INFORMATION FORM

1. Name: _____
2. Best way to contact you: _____
   Please provide a telephone number: _____
   Please provide your e-mail address: _____
3. Field of nursing you are interested in: _____
4. What experience do you have? _____
5. What type of knowledge do you feel you have? _____
6. What do you feel are your weak areas? _____
7. What is the best way for you to learn? _____
8. What do you feel is the best way for a clinical instructor to help you learn?

_____

_____

_____

_____

CHART CHECK

Question	Yes	No
Was the diagnosis clear? Explain.		
Did you find charting that was conflicting or confusing? Explain.		
Were there health issues that were not addressed? Explain.		
Did the physician's order seem appropriate for the patient's condition? Explain.		
Were the orders legible?		
Were there progress notes that were illegible?		
Did other disciplines chart appropriately? Explain.		
Were pain issues addressed initially?		
Did you find some charting or information confusing? Give details.		
Were the orders dated and timed by all disciplines?		
Did the patient have a deep vein thrombosis (DVT) prophylaxis ordered?		
Is the patient activity level specified?		
Find the policies and procedures manual. Look up two policies and summarize whether the policies are clearly written or whether they are confusing.		
If you had to call a Code Blue, how easy would it be? What would you do?		
When looking at the patient's chart, how can you determine who is the primary doctor?		

List the various sections in the chart:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

13. _____

14. _____

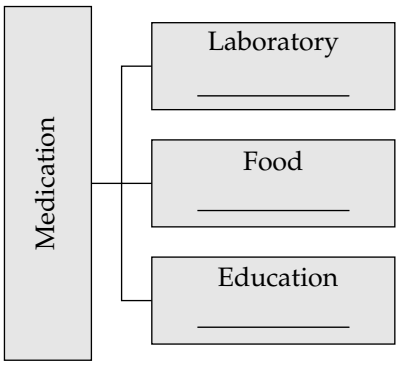
15. _____

SAMPLE MEDICATION FORM

Listed in the vertical box is a medication. For each of the remaining boxes, list the following:

Box 1: List a laboratory result you would need to monitor. Explain the significance of the laboratory test to the medication.
Box 2: List one food that may interact with the medication. Explain the significance of the food item to the medication.
Box 3: List one patient educational instruction you would give to the patient regarding the medication. Explain the significance of the instruction to the medication.

List other educational information you could provide this patient. Are there websites you can refer to? What about travel overseas and health issues? How should the medication be stored? Does the medication being administered interfere with other medications?



MATH QUIZ

1. Using the following conversion guide, convert the following temperatures.

$$C = \frac{F - 32}{1.8} \qquad C = (F - 32) \times 5/9$$

   a. 99.5°F = _____C
   b. 100.5°F = _____C
   c. The doctor orders Tylenol 650 mg orally for a temperature greater than 38.6°C. Your patient's temperature is 101.5°F. What dose would you give, if any? _____.

2. Using the following conversion guide, convert the following weights.
   Pounds × 2.2 = kg
   a. The patient weighs 110 pounds = _____ kg
   b. The patient weighs 312 pounds = _____ kg

3. In preparation for a colonoscopy, the patient must drink one 8-ounce glass of bowel cleanser every half hour. You receive 1 gallon of the bowel cleanser. The patient must be NPO [nothing by mouth] at midnight. At what time should the patient begin drinking to complete the gallon before midnight? _____

4. Your patient has an elevated sodium level of 152. The doctor orders the patient to increase the oral intake of free water to reduce the sodium level. The doctor orders 96 ounces of water daily. How many cups per day will the patient need to drink?
   _____ .

5. Convert the following:
   a. 1,000 mg = _____g
   b. 2.5 g = _____mg
   c. 0.025 mg = _____ mcg
   d. 1.25 mg = _____ mcg
   e. 5,000 mcg = _____ mg
   f. 250 mcg = _____ mg

6. Using the supplied conversion guide, convert the following heights.1 inch = 2.54 cm
   1 foot = 12 inches
   a. 5 feet 6 inches = _____ cm
   b. 6 feet 2 inches = _____ cm

7. The doctor orders Xanax 0.25 mg orally every night at bedtime. The dose available is 250 mcg tablets. What dose will you give? _____.

8. The doctor orders Dilantin 300 mg orally every afternoon. The dose available is 100 mg caplets. What dose will you give? _____.

9. The doctor orders amiodarone 400 mg orally daily. The dose available is 100 mg tablets. What dose will you give? _____.
10. The doctor orders Vasotec 5 mg orally daily. The dose available is 10 mg tablets. What dose will you give? _____.
11. The doctor orders 1,000 mg of Rocephin IV daily. How many grams of Rocephin would you administer? _____.
12. The doctor orders Synthroid 0.150 mg orally daily. You have 75 mcg tablets. What dose will you give? _____.
13. The doctor orders methylprednisolone 125 mg IVP Q12H. The dose available is 250 mg/5 mL. How many mL will you administer? _____.
14. The doctor orders digoxin 0.125 mg IV. The dose available is 5 mg/1 mL. How many mL will you administer? _____.
15. The doctor orders 1,500 mL D5.45 normal saline to infuse over 8 hours. Infusion set = 15 gtts/min. How many drops a minute will you run the IVF? _____.
16. The doctor orders 2 L of NS to run over 12 hours. The gtt factor is 20 gtts/min. How many drops/minute will you run the IVF? _____.
17. Add the following:
    a. 250 + 75 = _____.
    b. 375 + 35 = _____.
18. Subtract the following:
    a. 500 – 250 = _____.
    b. 750 – 375 = _____.
19. *Multiply the following:*
    a. 125 × 5 = _____.
    b. 250 × 50 = _____.
20. Divide the following:
    a. 250 ÷ 5 = _____.
    b. 20 ÷ 0.9 = _____.
21. A patient is receiving ampicillin 500 mg orally every 6 hours. One hour after administration the patient is complaining of pruritis and hives are present. Diphenhydramine (Benadryl) 75 mg elixir is ordered. The pharmacy has supplied 12.5 mg per teaspoon. How many tablespoons would the nurse administer? _____.
22. Vancomycin 1.5 grams IV is ordered daily. The pharmacy has evaluated that kidney functions for this client are deteriorating and the creatinine has climbed to 2.6 mg/dL and has determined that the dose needs to be decreased to 500 mg and has to be

rescheduled to every 36 hours after the last dose. The last dose was given yesterday, 6/3, at 2100. When is the next dose due? _____.

23. A Tylenol overdose has been admitted and the antidote Mucomyst (Acetylcysteine) IV has been ordered. The loading dose is 150 mg/kg in 200 ml of D5W to be administered over 20 minutes using an IV infusion pump and micro-drip tubing. The patient weighs 164 pounds. What rate would the nurse set on the IV pump? Round up the kg to the tenth. How many mg would be given? _____.

24. A patient has received 4 mg of morphine after surgery and the respirations have dropped to a rate of 8 per minute. The nurse is unable to arouse the client and has a standing order for narcan 0.1 mg IV. The dose is supplied in vials that are 0.4 mg/ml. What dose would be given and what size syringe would the nurse utilize? _____.

25. A patient with anxiety has been admitted with seizures due to a possible benzodiazepine overdose. The antidote Romazicon (flumazenil) is ordered. A dose of 0.2 mg is ordered to be administered intravenously over 15 seconds. Pharmacy has sent 0.1mg / 1 ml vial. What dose would the nurse administer? _____.

ANSWERS TO MATH QUIZ

1. Using the following conversion guide, convert the following temperatures.

$$C = \frac{F - 32}{1.8} \qquad C = (F - 32) \times 5/9$$

a. 99.5°F = __37.5__C
b. 100.5°F = __38.06__C
c. The doctor orders Tylenol 650 mg orally for a temperature greater than 38.6°C. Your patient's temperature is 101.5°F. What dose would you give, if any? __None__

2. Using the following conversion guide, convert the following weights.
Pounds × 2.2 = kg
a. The patient weighs 110 pounds = __49.895__ kg
b. The patient weighs 312 pounds = __141.818__ kg

3. In preparation for a colonoscopy, the patient must drink one 8-ounce glass of bowel cleanser every half hour. You receive 1 gallon of the bowel cleanser. The patient must be NPO [nothing by mouth] at midnight. At what time should the patient begin drinking to complete the gallon before midnight?

4 p.m. One gallon equals 128 ounces. The patient will be drinking 16 ounces in an hour (8 ounces every 30 minutes × 2). 128 ounces/16 ounces/hr = 8 hours. 12 midnight minus 8 hours would be 4 p.m.

4. Your patient has an elevated sodium level of 152. The doctor orders the patient to increase the oral intake of free water to reduce the sodium level. The doctor orders 96 ounces of water daily. How many cups per day will the patient need to drink?
12 cups daily

There are 8 ounces in one cup, so 96 ounces/8 ounces/cup = 12 cups.

5. Convert the following:
   a. 1,000 mg = 1 g
   b. 2.5 g = 2,500 mg
   c. 0.025 mg = 25 mcg
   d. 1.25 mg = 1,250 mcg
   e. 5,000 mcg = 5 mg
   f. 250 mcg = 0.25 mg

6. Using the supplied conversion guide, convert the following heights.
   1 inch = 2.54 cm 1 foot = 12 inches
   a. 5 feet 6 inches = 167.64 cm
   b. 6 feet 2 inches = 187.96 cm

7. The doctor orders Xanax 0.25 mg orally every night at bedtime. The dose available is 250 mcg tablets. What dose will you give? One tablet

8. The doctor orders Dilantin 300 mg orally every afternoon. The dose available is 100 mg caplets. What dose will you give? Three caplets

9. The doctor orders amiodarone 400 mg orally daily. The dose available is 100 mg tablets. What dose will you give? Four tablets

10. The doctor orders Vasotec 5 mg otally daily. The dose available is 10 mg tablets. What dose will you give? 1/2 tablet

11. The doctor orders 1,000 mg of Rocephin IV daily. How many grams of Rocephin would you administer? 1 g

12. The doctor orders Synthroid 0.150 mg orally daily. You have 75 mcg tablets. What dose will you give? Two tablets

13. The doctor orders methylprednisolone 125 mg IVP Q12H. The dose available is 250 mg/5 mL. How many mL will you administer? 2.5 mL

14. The doctor orders digoxin 0.125 mg IV. The dose available is 500 mcg/1 mL. How many mL will you administer? 0.25 mL = 0.125 mg or 125 mcg

15. The doctor orders 1,500 mL D5.45 NS to infuse over 8 hours. Infusion set = 15 gtts/min. How many drops a minute will you run the IVF? 47 gtts/min

(*continued*)

ANSWERS TO MATH QUIZ (*continued*)

16. The doctor orders 2 L of NS to run over 12 hours. The gtt factor is 20 gtts/min. How many drops/minute will you run the IVF? 67 gtts/min

17. Add the following:
a. 250 + 75 = 325
b. 375 + 35 = 410

18. Subtract the following:
a. 500 – 250 = 250
b. 750 – 375 = 375

19. Multiply the following:
a. 125 × 5 = 625
b. 250 × 50 = 12,500

20. Divide the following:
a. 250 ÷ 5 = 50
b. 20 ÷ 0.9 = 22.2

21. The nurse would administer 2 tablespoons. The prescription calls for 75 mg so 75mg x tsp (5ml)= 2 tbsp or 30 ml 12.5 mg

22. There are 24 hours in a day; 6/3 at 2100, to 6/5, at 0900 is 36 hours so the dose should be rescheduled for that time.

23. $\frac{164 \text{ pounds}}{2.2 \text{ pounds}} \times 1 \text{ kg} = 74.6 \text{ kg}$ 150mg x 74.6 kg = 11,190 mg/kg

Total volume/ml $\frac{200 \text{ ml}}{20 \text{ min}} \times \frac{60 \text{ min}}{1 \text{ hr}} = 600 \text{ ml/ hr}$

24. $\frac{0.1 \text{ mg}}{0.4 \text{ mg/ ml}} = 0.25 \text{ ml}$. To adequately withdraw and administer the dose, a 1-ml or a 3-ml syringe should be used for accuracy.

25. $\frac{0.1 \text{ mg}}{0.2 \text{ mg}} \times 1 \text{ ml} = 0.5 \text{ ml}$

VOCABULARY QUIZ

Define the following words. Return to your instructor by next week's preconference.

Abduction
Accountability
Acupuncture
Adduction
Advocate
Analysis
Anorexia
Aphasia
Atelectasis
Atrophy
Autonomy
Beneficence
Biot's
Blanching
Borborygmi
Chancre
Cheyne-Stokes
Crackles
Culture
Cyanosis
Dehiscence
Dementia
Deontology
Depression
Diffusion
Distention
Dorsiflexion
Edema
Emboli
Empathy
Ethnicity
Evisceration
Excoriation
Exudate
Fidelity
Hemorrhage
Homeopathic
Hypoxemia
Iatrogenesis
Idiopathic
Induration
Inference
Infiltrate
In situ
Justice
Kyphosis
Lethargy
Lordosis
Maximal impulse
Narcolepsy
Neglect
Neuropathy
Nodule
Nonmaleficence
Oliguria
Pallor
Palpation
Paralytic ileus
Perfusion
Peristalsis
Pigmentation
Plantar flexion
Polyuria
Prioritizing
Pulse deficit
Pulse pressure
Referral
Regurgitation
Resiliency
Slough
Stenosis
Syncope
Synergistic
Thrombocytopenia
Thrombus
Turgor
Utilitarianism
Valsalva maneuver

ANSWERS TO VOCABULARY QUIZ

Abduction: To move away from the median plane (mid-section) of the body

Accountability: The responsibility taken on by health care professionals for patient care

Acupuncture: Technique of inserting fine needles at specific points

Adduction: To move toward the median plane (mid-section) of the body

Advocate: A person who supports or speaks in favor of another

Analysis: The examination of body components or parts and the results of that examination

Anorexia: Loss of appetite

Aphasia: Loss or impairment of ability to use or understand language

Atelectasis: A collapsed lung

Atrophy: A wasting away or decrease in size

Autonomy: To function independently

Beneficence: Basic principle emphasizing doing what is best for the patient

Biot's: A pattern of breathing characterized by several short breaths followed by a long, irregular period of apnea

Blanching: To lose color

Borborygmi: rumbling sounds caused by the movement of gas in the intestine

Chancre: The primary sore or ulcer at the site of entry of a pathogen

Cheyne-Stokes: Breathing pattern characterized by up to a minute of apnea followed by a gradual increase in depth and frequency of respirations

Crackles: Abnormal lung sounds, also known as rales, that produce popping sounds

Culture: The shared customs, beliefs, language, and way of life of a particular people

Cyanosis: A bluish discoloration due to deficient oxygenation

Dehiscence: A bursting open of the surgical wound

Dementia: A chronic and progressive disorder of the mental processes

Deontology: The study or theory of moral obligation or duty

Depression: A state of excessive sadness

Diffusion: The process by which molecules move from a region of high concentration to an area of lower concentration

Distention: To enlarge from internal pressure; to swell

Dorsiflexion: Flexing in an upward direction

Edema: Excessive buildup of fluid in the tissue

Emboli: A mass (solid, gas, or liquid) circulating in the blood or lymphatic vessels

Empathy: The ability to understand and be sensitive to the feelings of another

Ethnicity: Affiliation with a particular group based on shared physical or cultural identity

Evisceration: Removal of the organ(s)

Excoriation: Abrasion of the skin

Exudate: The fluid released into superficial lesions or areas of inflammation

Fidelity: Faithfulness or loyalty; conforming to truth or fact

Hemorrhage: Significant loss of blood

Homeopathic: Administering a minute dose of medication

Hypoxemia: Abnormally low concentration of oxygen in the arterial blood

Idiopathic: Illness of unknown etiology

Iatrogenesis: A harm caused by the medical profession that was preventable

Induration: An area of hardened tissue

Inference: A conclusion arrived at from given premises or observations

Infiltrate: To pass into or through a substance or space

In situ: In the normal place without invading the surrounding tissue

Justice: The quality of being just, impartial, or fair

Kyphosis: Exaggerated outward curvature of the spine

Lethargy: Abnormal drowsiness or mental sluggishness

Lordosis: Abnormal forward curvature of the spine

Maximal impulse: Location to auscultate the best heart sounds

Narcolepsy: Condition of brief recurrent attacks of daytime sleepiness

Neglect: To fail to care for, pay little or no attention to, or leave undone

Neuropathy: Any disease of the nerves

Nodule: A small abnormal swelling or aggregation of cells

Nonmaleficence: The principal of not doing something that causes harm

(*continued*)

ANSWERS TO VOCABULARY QUIZ (*continued*)

Oliguria: Urine output less than 400 mL/daily

Pallor: Lack of color; paleness

Palpation: To examine by application of the hands or fingers to the body surface

Paralytic ileus: Paralysis of the intestine; causes swelling and pain

Perfusion: The circulation of blood through tissue

Peristalsis: Wave-like involuntary contractions of the digestive tract

Pigmentation: Coloration resulting from deposit of pigments

Plantar flexion: Movement of the foot; to flex the foot or toes downward

Polyuria: Excessive amount of urination

Prioritizing: To organize tasks or goals; placing most important task first

Pulse deficit: Condition in which the pulse at the radial artery is less than that of the heart

Pulse pressure: The difference between the systolic and diastolic blood pressure

Referral: Sending to another for consultation or service

Regurgitation: Backward flow

Resiliency: The ease with which a patient recovers from shock, stress, depression, and so on

Slough: Dead tissue separating from the living tissue

Stenosis: Abnormal narrowing of a blood vessel or tube in an organ

Syncope: A short and usually sudden loss of consciousness

Synergistic: The action of two or more drugs working together is greater than the sum of their actions working alone

Thrombocytopenia: Abnormal decrease in the number of platelets

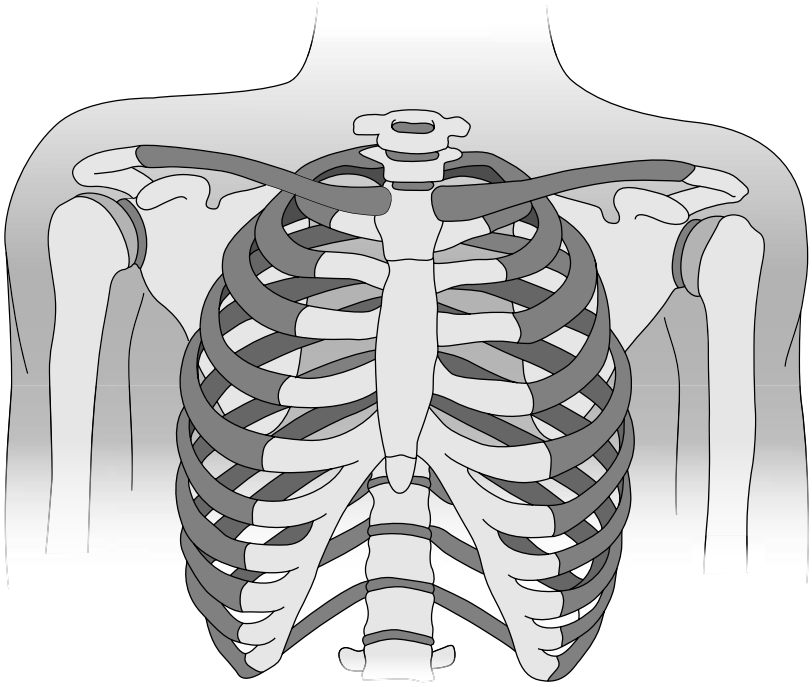
Thrombus: A blood clot that adheres to the wall of a blood vessel or organ

Turgor: The rigidity of a cell due to swelling with fluid; the elasticity of the skin

Utilitarianism: A theory; to achieve the greatest benefit for the greatest number

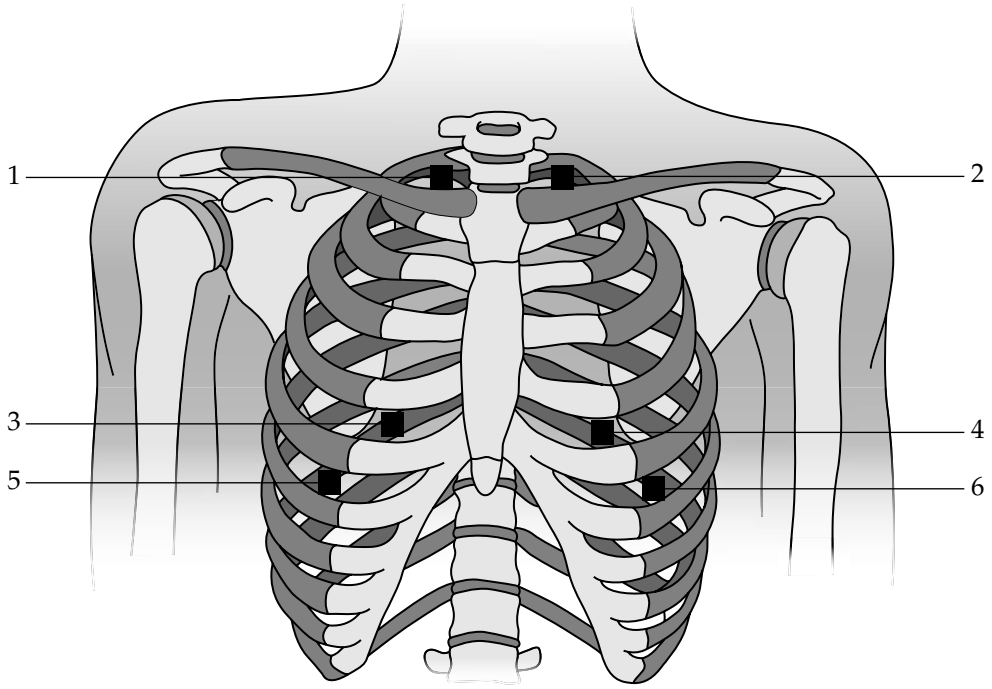
Valsalva maneuver: Attempting to exhale with the nose, mouth, and glottis closed; the maneuver of bearing down; may cause a drop in blood pressure and heart rate

BREATH SOUNDS AUSCULATION QUIZ



Indicate the areas used for breath sounds ausculation in this image.

ANSWERS TO BREATH SOUNDS AUSCULATION QUIZ



Posteriorly, the lungs should be ausulated in the some areas.

CHAPTER 5

Nursing Assessments, Concept Mapping, and Critical Thinking

EXAMPLE OF PHYSICAL ASSESSMENT FORM

Patient name: _____ Age: _____ Diagnosis: _____
Height: _____cm Weight: _____kg Pain: _____
Scale _____
Vital signs: B/P _____HR _____RR _____Temp _____O_2 saturation _____
_____

Neurological: Level of consciousness (LOC): alert/oriented ____ drowsy, lethargic, obtunded, somnolent, or unresponsive
Responds to: Verbal, tactile, noxious, pain, or no response
Postures: _____
Withdraws: Left arm _____, right arm _____, left leg _____, or right leg _____
Able to follow commands _____ Grasp = or ≠
Bilateral lower extremities: push/pull = or ≠
Speech: Clear, garbled, slurred, or aphasic. Facial tone _____ symmetrical/asymmetrical
Pupils: = or ≠ Size: Left ____mm Right _____mm
History of neurological problems: _____
History of falls: _____ Gait steady: Yes/No History of dizziness: Yes/No History of numbness/tingling: _____
_____

Cardiac: Heart sounds: regular/irregular Murmurs: New/Old
Pulses: Palpable: left radial _____, right radial _____, left dorsalis pedis _____, right dorsalis pedis ____ left posterior tibial _____ right posterior tibial _____.
(Enter P for palpable or D for doppled pulse.)
Edema: Location _____
Rate edema: 1+, 2+, 3+, 4+, or anasarca _____
History of cardiac problems: _____
_____

Respiratory: Lung sounds: clear throughout, crackles: location _____, rales: location _____, wheezes (inspiratory or expiratory): location _____
Respiratory treatments: ____ Type: _____ Frequency: _____
Home O_2: _____ Type: _____ Amount: _____ SOB: _____
DOE: _____ Orthopnea: _____

Sleeps on _____ pillows. Cough: Yes/No; Productive, non-productive

Sputum amount: _____ Color: _____

History of respiratory problems: _____

_____

Gastrointestinal: Positive bowel sounds to all quads: Yes/No
Explain: _____
Hypoactive bowel sounds: _____
Hyperactive bowel sounds: _____

Abdomen: Soft, firm, rigid, tender to palpation: Yes/No. Flat, protuberant, rounded, or obese

Diet: Regular, AHA, ADA, clear liquid, soft, other: _____

Able to feed self: Yes/No. Intake appropriate: Yes/No. Need for dietary consult: Yes/No. Reason for consult: _____

NGT/OGT/PEG/J-tube. Tube feeding type: _____

Defecation: Regular/constipation/diarrhea/colostomy. Usual bowel regime: Daily; every other day: _____

Does patient require finger sticks AC and HS: Yes/No
Antidiabetic medication: _____

History of GI problems: _____

_____

Genitourinary: Independent voids, Foley, suprapubic catheter, ileostomy, or incontinent: _____

History of hesitancy, frequency, urgency, burning, pain, anuric, polyuric, or oliguric: _____

Dialysis: Hemodialysis, peritoneal dialysis. AV fistula: thrill + or -, bruit + or -, dialysis catheter: _____

Urine character: clear, cloudy, sediment, bloody, or odorous. _____

Urinary output amount: adequate: Yes/No How many cc/kg: _____

Bladder flat or distended: Yes/No

History of genitourinary problems: _____

_____

Genital: Male: Penis: normal, swollen, normal physical findings: Yes/No
Explain if no: _____

Testes normal: Yes/No. Implants: Yes/No. History of testicular cancer, or prostate cancer: Yes/No

Female: Labia normal: Yes/No. Swollen, red, normal hair distribution

Postmenopausal: Yes/No Menses: regular/irregular Vaginal discharge: Yes/No
Describe: _____

Vaginal odor: Yes/No. Gravida: Number of pregnancies _____
Para (Number of live births): _____

Participates in routine health checks: prostate exam, Pap smear/mammograms: Yes/No

Results of above tests: normal/ abnormal. Explain: _____

History of genital problems: _____

_____

Musculoskeletal: ROM/PROM. Limitations: Yes/No

Explain _____

Contractures: Yes/No. Location: _____

Joints: Normal/abnormal/swollen/red/painful
Explain _____

Able to ambulate without difficulty: Yes/No
Explain _____

Requires: Wheelchair, walker, cane, or crutches
Explain _____

History of musculoskeletal problems: _____

_____

Integumentary: Skin intact: Yes/No Pressure ulcer(s): Yes/No

Describe the stage and depth of the wound in centimeters, any tunneling or undermining, any drainage if yes response: _____

_____

Skin: Warm/cool/hot/diaphoretic

Skin color: Appropriate for race: Yes/No
Pale, ashen, cyanotic, jaundice, or mottled

Alterations: Yes/No Ecchymotic, rash, vesicles, or lesions

(*continued*)

EXAMPLE OF PHYSICAL ASSESSMENT FORM (*continued*)

Turgor: Good elasticity, poor elasticity, tight, or fragile

Risk level for pressure ulcer: high, medium, or low
Need for wound care consult: Yes/No

Mobility: Immobility, limited, no limitations

IV access: Peripheral, central, or PICC. Site date: _____.
Site assessed: _____
Dry, intact, leaking, or red. Dressing type: gauze, or transparent

History of integumentary problems: _____

_____

Psychological: Behavior: appropriate, inappropriate. Explain: _____
Mood: Appropriate, inappropriate
History of psychological problems: _____

Activities of daily living (ADL): Able to perform ADL: independently, with assist, total care

_____

Current Immunization: Pneumovax: Date administered _____

Flu vaccine: Date administered_____

Tetanus: Date administered _____

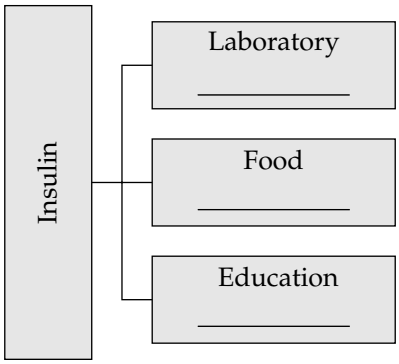
Additional notes: _____

MEDICATION FORMS

Listed in the vertical box is a medication. For each of the remaining boxes, list the following:

Box 1: List a laboratory result you would need to monitor. Explain the significance of the laboratory test to the medication.
Box 2: List one food that may interact with the medication. Explain the significance of the food item to the medication.
Box 3: List one patient educational instruction you would give to the patient regarding the medication. Explain the significance of the instruction to the medication.

List other educational information you could provide this patient. Are there websites you can refer to? What about travel overseas and health issues? How should the medication be stored? Does the medication being administered interfere with other medications?



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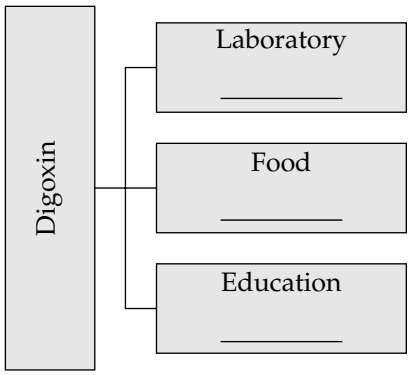

CHAPTER 6

Sensory Deficits in the Elderly and Assessments of the Visual, Auditory, and Nasal Systems

SITUATION EXERCISE FORM

Disease: _____

Risk for or Cause of: _____

Patient Education: _____

Compliance	Noncompliance
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Complications

_____

_____

_____

_____

ANSWERS TO SITUATION EXERCISE FORM

Disease: Diabetes

Risk for or Cause of: Sensory and visual effect; poor eyesight

Patient Education: Dietary changes needed

Compliance	Noncompliance
Active lifestyle	Sedentary lifestyle
Normal blood sugar control	Abnormal blood sugar levels
Normal vital signs	Abnormal vital signs (hypertension)
Normal skin integrity	Abnormal skin integrity (ulcers)

Complications

Overweight or obesity
Neuropathy
Renal failure
Ulcers
Loss of eye sight
Drowsiness
Dialysis
Amputation
Death

MEDICATION FORMS

Listed in the vertical box is a medication. For each of the remaining boxes, list the following:

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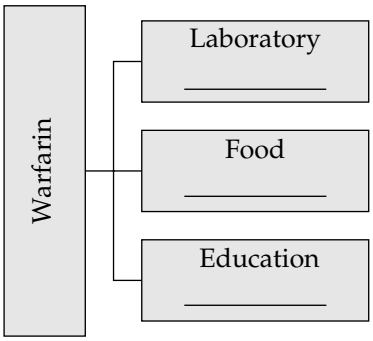

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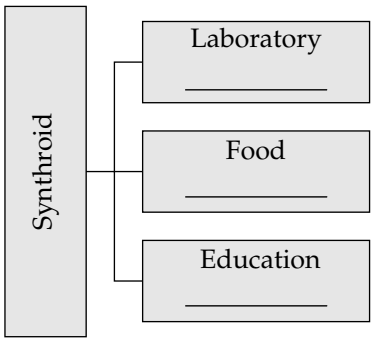

CHAPTER 7

Understanding, Assessing, and Treating Pain

PAIN INTERVIEW EXERCISE

Interview two people (age 62 or older) and enter their answers to the following questions:

Have you ever experienced pain?_____

What was the underlying cause of the pain?_____

What did you do for the pain?_____

Can you describe the pain?_____

_____

_____

_____

_____

Have you attempted alternative therapies? If so, what type?

_____

_____

_____

Did the alternative therapies work? _____

Did you take any medications for the pain? If so, what did you take?

_____

_____

_____

Did you seek medical care for the pain?_____

MEDICATION FORM

Listed in the vertical box is a medication. For each of the remaining boxes, list the following:

Box 1: List a laboratory result you would need to monitor. Explain the significance of the laboratory test to the medication.
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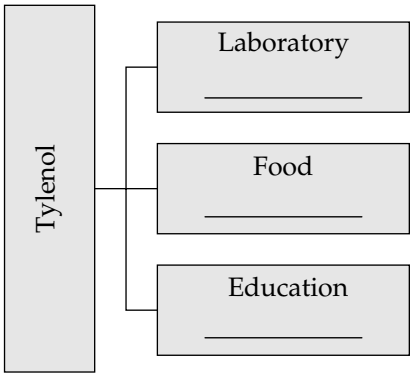

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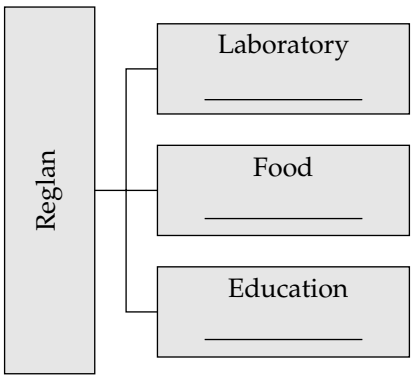


CRITICAL THINKING CASES

CASE #1

A 52-year-old male of Middle Eastern descent is admitted with diffuse abdominal pain, nausea, vomiting, and abdominal distention over the past 3 to 4 days. Pain has been increasing in intensity over the past days. A computed axial tomography (CAT) scan shows a ruptured sigmoid volvulus with distended bowel loops. Emergency surgery, as well as diagnostic lab tests, were scheduled. Abdominal surgery consisted of a sigmoid resection with primary anastomosis and Hartmann's procedure. Post-operatively, the patient received a PCEA (administration pump for use when returning back to the floor). The medication in the PCEA machine is fentanyl 7,500 mcg/300 mL bag (25 mcg/mL) with bupivacaine 1.25 mg/L double checked by both nurses. The PCEA settings are fentanyl 12.5 mcg demand, lockout 10 minutes, basal 25 mcg/hr, clinician bolus of 25 mcg every 30 minutes not to exceed 0.2 mg/hr. The nurse notices that the epidural tubing has a yellow strip in the tubing. The nurse inspects the patient's back and the PCEA tubing and dressing are intact. The nurse will fill out the PCEA sheet that follows, which is checked by two nurses.

Thirty minutes after the initial assessment, the nurse is evaluating the patient, and the patient complains of feeling less pain relief than earlier. When the nurse checks the pump, she finds that the patient has pushed the button 36 times within a half-hour period.

Answer the following questions and return by preconference next week.

1. Where is the epidural catheter placed?
2. Why is bupivacaine added to the epidural?
3. What are the advantages of PCEA?
4. What are the disadvantages of PCEA?
5. What conditions does the nurse need to evaluate on a continuous basis?
6. The patient received two clinician boluses in the past 4 hours in addition to the original settings. How much fentanyl has the patient received during the first hour?
7. Fill in the PCEA sheet.
8. What causes may prevent the patient from receiving relief from the PCEA administration?
9. What is a volvulus?

Date/Time PCEA Initiated
1. Delivery rate: _____ml/hr
2. Bolus dose: _____ml
3. Lockout interval: _____minutes
4. Maximum 1-hour limit: _____ml
5. Loading dose: _____ml

PCEA PUMP SETTINGS							PATIENT ASSESSMENT						
Date/ Time	Delivery rate	Bolus dose	Delay	1-hour limit	Number of injections demanded/ delivered	Volume infused	Pain	Sedation	BP	P	RR	Side effect	Initial

ANSWERS TO CASE #1

1. The epidural catheter is inserted into the epidural space between the spinal column and the dura. The epidural catheter is placed and the medication will innervate a particular part of the skin called a dermatome (a part of the skin that derives from a nerve root), which will provide post-op pain relief to that site.
2. Bupivacaine acts as a local anesthetic.
3. PCEA provides improved pain relief over other methods and can improve the patient's outcome. It is frequently used post-operatively for post-op pain, for procedural pain, and for cancer, trauma, and labor pain.
4. PCEA may cause nausea, vomiting, pruritus (itching), hypotension, numbness, hematoma, bleeding, infection, headache, and/or motor weakness as well as paralysis.
5. The nurse needs to monitor the back dressing for hematomas and the line for patency as well as test muscle strength, monitor dermatomes for sensation, and monitor for paresthesia.
6. The PCEA settings are fentanyl 12.5 mcg demand, lockout 10 minutes, basal 25 mcg/hr, clinician bolus of 25 mcg every 30 minutes not to exceed 0.2 mg/hr.

   Two clinician boluses were 25 mcg × 2 = 50 mcg.

   Basal rate of 25 mcg/hr × 1 hour = 25 mcg.

   There are six times (10 minutes lockout) × 1 hour that the patient has pushed within the first hour, which is 6 × 12.5 mcg = 75 mcg.

   Total amount of fentanyl received in first hour is 50 mcg + 25 mcg + 75 mcg = 150 mcg.
7. Filled-in PCEA sheet.
8. The patient has pushed the button on the PCEA machine more than the allotted dose of six programmed doses in the machine. The patient has pushed the button 36 times and this is recorded in the machine. The nurse needs to investigate why this has occurred. The reasons could be:
   - The PCEA pump is malfunctioning.
   - The nurse is confused over the concentration of the drug (mcg versus mL) and has programmed the pump incorrectly.
   - The demand dose is confused with the basal rate.
   - Wrong lockout on pump.
   - Wrong medication.
   - The patient needs reeducation on the pump.
9. A volvulus is twisting of the large or small intestines that can cause decreased blood flow and ischemia.

Date/Time PCEA Initiated
1. Delivery rate: ____1____ml/hr
2. Bolus dose: ____1_____ml
3. Lockout interval: _____10___minutes
4. Maximum 1-hour limit: ____9____ml
5. Loading dose: ___0____ml

PCEA PUMP SETTINGS							PATIENT ASSESSMENT						
Date/ Time	Delivery rate	Bolus dose	Delay	1-hour limit	Number of injections demanded/ delivered	Volume infused	Pain	Sedation	BP	P	RR	Side effect	Initial
1/12 1300	1	2	10	9	12/9	9	10	1	130/72	110	12	0	mm
1/12 1700	1	0	10	9	36/9	18	18	1	124/76	100	16	0	mm

CASE #2

The nurse assumes care of a 38-year-old Caucasian female with a history of fibromyalgia who is normally on MS Contin 20 mg orally three times a day at home. The nurse is told in report that the patient, who is admitted for the management of her pain, complains of 10/10 pain in her joints, but is frequently laughing and talking while she is requesting this pain medicine. The nurse giving report feels that the patient is a "drug seeker" and that she really does not have the pain she is reporting. Her lab work and vital signs are all within normal limits, and the patient is currently receiving Vicodin one tablet every 4 hours as needed for pain. She is married and has two children, ages 8 and 10, and is currently on disability because of her diagnosis.

Answer the following questions and return by preconference next week.

1. What is fibromyalgia?
2. Why would the patient be talking and laughing if she is in so much pain?
3. What kind of changes will occur with chronic pain?
4. What is pain?
5. What are the immediate and long-term goals for this patient?
6. What are the patient's priorities?
7. What other factors might be influencing this patient's pain?

ANSWERS to CASE #2

1. Fibromyalgia is a chronic, widespread, painful disease that affects the muscles and joints. The symptoms will range from mild to severe weakness, fatigue, insomnia, and muscle trigger points. The cause is unknown. Associated cognitive disorders and psychological issues such as posttraumatic stress disorder are usually present.
2. Chronic pain causes changes to the autonomic nervous system and loss of brain mass. Patients with chronic pain may have adjusted to their condition, so their sympathetic nervous system may have adjusted its response when dealing with pain. This will make the patient appear less stoic to the pain response—the "fight or flight" response usually associated with the sympathetic nervous system.
3. Chronic pain will worsen other physical conditions. There are changes to the fascia, decreasing blood flow to the muscles. Damage may occur to the neurological pathways. There may be increased sensitivity to pain, emotional changes (such as anxiety disorders and depression), and cognitive deficits.
4. Pain is what the patient's perception of pain is. Pain is experienced differently by each person. Pain is usually undertreated.
5. The immediate goals are first to deal with the patient's pain and then to encourage her to seek other modalities for pain relief such as acupuncture, exercise, healthful eating, NSAIDs, use of a TENS unit, family therapy, and caregiver support. Long-term goals include addressing the issues of sleep deprivation, appetite loss, and depression.

6. There may be loss of appetite, lack of sleep, and depression. The patient may be experiencing strained relationships. Psychosomatic issues may cause a patient's pain. There was a change in the type of medication and administration, and it may not be effective in relieving the patient's pain.
7. Emotional responses may intensify the pain. There may be feelings of hopelessness. There may be a cognitive impairment present because of changes caused by chronic pain. Some patients may underrate their pain because of a fear of being labeled as a "drug addict." The nurse's or doctor's perception of the patient's pain may not lead to effectiveness of care. There may be persistent biases concerning tolerance, addiction, and dependency.

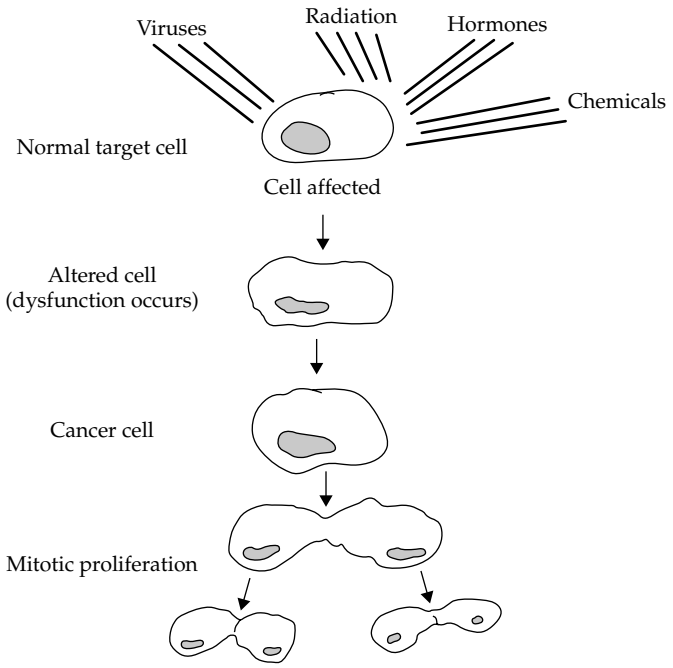
CHAPTER 8

Understanding Cancer, Cancer Treatments, and Death and Dying

CANCER CELL EXERCISE

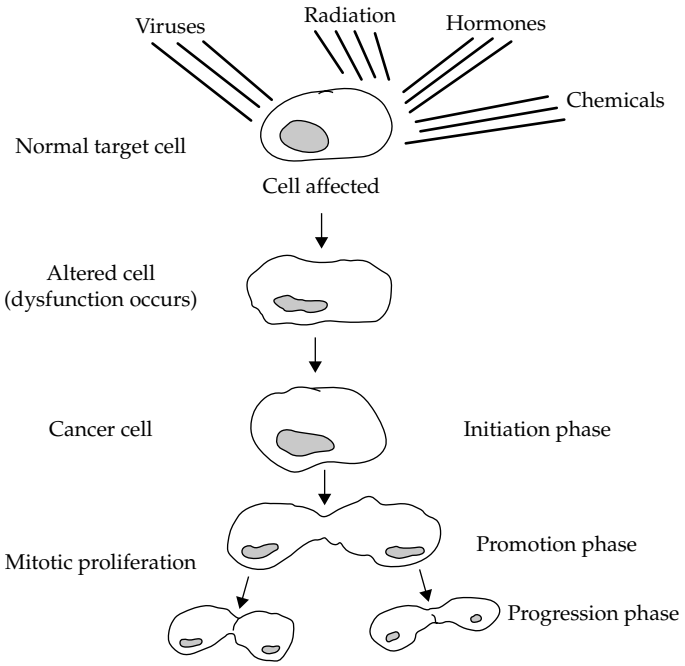
Label the various phases of cancer cell growth. Return by preconference next week.

Factors that can cause target cells to become abnormal.



ANSWERS TO CANCER CELL EXERCISE

These factors can cause a target cell to become abnormal.



MEDICATION FORMS

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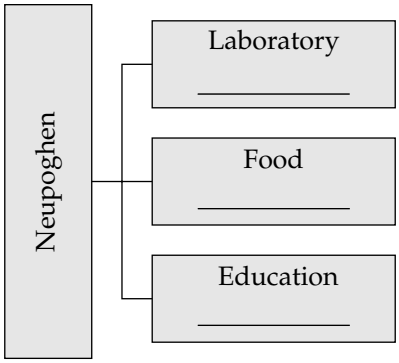

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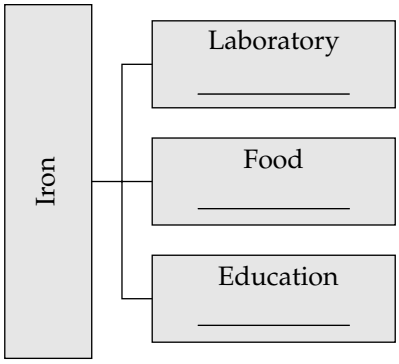


CASE #1

A 72-year-old Caucasian female is admitted with oat cell carcinoma status postchemotherapy. She is complaining of extreme fatigue and weakness. She has had a decreased appetite and has not eaten for two days. Her lab work consists of WBC 2.3, Hgb 7.8, Hct 21.2, platelets 86,000, sodium 123, potassium 3.6, chloride 101, carbon dioxide 24, calcium 7, and albumin 1.2.

1. What is oat cell carcinoma?
2. What considerations would the nurse evaluate to indicate when a patient needs a blood transfusion?
3. What is the normal platelet count, and what will influence the platelet count?
4. What precautions would you use with a low white count?
5. What antidiuretic abnormalities may occur with oat cell carcinoma?
6. Why does the patient have a low albumin level?

ANSWERS TO CASE #1

1. Oat cell carcinoma is a highly malignant cancer in the lungs that is treated with chemotherapy and radiation.
2. The nurse needs to ask these questions:
   - Is the patient symptomatic? For example, does the patient have a low blood pressure? Does the patient have tachycardia? Does the patient have cool or clammy skin? What is the trend in the hematocrit?
   - Is there any evidence of bleeding?
   - Is the patient scheduled for any procedure or surgery that is going to cause blood loss?
   - Is a blood transfusion going to complicate the prognosis (i.e., might it increase the risk of reoccurrence of cancer)?
3. Normal platelet count is 150,000 to 300,000. Platelet counts are influenced by bleeding, chemotherapy, radiation, and medications such as Plavix, aspirin, or Pepcid.
4. Reverse isolation, which requires protecting the patient from others; no fruits or fresh flowers.
5. The sodium is low and may be indicative of syndrome of inappropriate diuretic hormone (water intoxication). Cancer cells will manufacture and secrete ADH, which will result in extreme dilution of sodium. Low sodium will then cause changes in the neurological system that can lead to seizures and coma. (Remember "too many letters, too much ADH.")
6. Albumin is an indicator of the overall health of the patient and is needed for growth and repair. The patient has not eaten for several days

CASE #2

A 45-year-old female is admitted with extreme fatigue and chest pain. The patient has a past medical history of ovarian cancer in both ovaries with metastasis to the uterus. The patient is being treated with Taxol and Cisplatin, given IV every 3 weeks through a mediport. On assessment the nurse notes numerous ecchymotic and petechiae sites. The patient states that she frequently "bumps" into things. Her skin is cool, she has delayed capillary refill of 4 seconds, RR 24 with O_2 saturation of 91%, BP of 88/60. She is ordered a 250 mL bolus. Her coagulation studies are within normal limits. The patient is ordered 2 units of PRBC and a random unit of platelets. The following lab work is listed:

Sodium 152 mEq/L	WBC 2,000
Potassium 4.8 mEq/L	Hgb 7 g/dL
BUN 30 mg/dL	Hct 21.6
Creatinine 1.5 mg/dL	Platelets 9,000 mm_3

1. What is a bolus?
2. What considerations need to be addressed before a blood transfusion?
3. What is ecchymosis and what are petechiae?
4. What does the BUN/Cr ratio mean?
5. Why can a low WBC be dangerous to a patient?
6. What is a random unit of platelets?
7. Why are the sodium and potassium elevated?
8. What is a mediport?

ANSWERS TO CASE #2

1. A bolus is a rapid infusion of isotonic fluids to increase intravascular volume, and is given in this circumstance for hypotension. The patient is anemic and is symptomatic because of low blood pressure and narrowing pulse pressure. It will take time, at least 1 to 2 hours, to crossmatch and the patient is presently symptomatic.
2. The type of IV access needs to be evaluated. There needs to be a large-bore IV to give blood products, preferably an 18 or 20 gauge IV. The patient's cardiac and respiratory status needs to be addressed, as well as the blood consent, doctor's order, and vital signs. The patient's respiratory status must be assessed for the risk of fluid overload. Because chemotherapy can frequently cause cardiomyopathy, the student should evaluate for any cardiac stress related to a blood transfusion.
3. Ecchymosis is purplish discoloration of the skin caused by ruptured blood vessels. When observing ecchymosis, it is wise to circle the area and to measure the diameter of the extremity to see whether the bleeding increases its size. Petechiae are small, reddish-brown flat spots that appear in the skin or mucous membrane. These skin alterations are due to low platelets and the trauma from the patient bumping into items.

4. BUN is a waste product. Creatinine evaluates the amount of nephron injury. A BUN/Cr ratio will detect conditions that are affecting the kidneys. A normal BUN/Cr ratio is 15 to 1, but when there is decreased blood flow, such as when a patient is in shock, the ratio will increase to 20 to 1. When there is an intrinsic disease such as glomerulonephritis, there will be BUN/Cr ratio of 10:1. This patient's BUN/Cr is 30/1.5, which reflects kidney injury.
5. A lowered WBC can make the patient more susceptible to infection. Neupogen might be ordered to increase the WBC.
6. A random unit of platelets is a collection of up to 6 to 8 units of different donor specimens with the same ABO grouping collected into one bag for transfusion. The survival rate for platelets may last for 3 days, but it may be dependent on the disease process. The physician may order leukocyte-reduced platelets to avoid a transfusion reaction.
7. The sodium and potassium are elevated due to dehydration and hypovolemia.
8. A mediport is a central line catheter implanted under the skin. It is accessed by the nurse using sterile technique and is punctured through the skin with a Huber needle that looks like a fish hook. The mediport is used both for infusion and blood draws.

CASE #1

A 27-year-old male has suffered a gunshot wound to the right temporal region of the head due to a drug deal incident 48 hours ago. The patient is listed as "nondisclosure" because the perpetrator has not been arrested. A CT scan of the head shows fragmentation of the bullet and shows an intracranial epidural hemorrhage with midline shift of ventricles and diffuse edema of right cerebral hemisphere. The patient presents with a BP of 88/60, HR 130, O_2 saturation 98% on PRVC AC 16, TV 500, PEEP 5, and FIO 2% of 50%. Pupils are 6 mm, and coma scale is 3.
There are absent brainstem reflexes. A brain flow study is negative, and the patient has been declared brain dead and is being followed by the organ donation service.

Answer the following questions and return by preconference next week.

1. What does it mean when a patient is listed as "nondisclosure"?
2. How would nurses defend themselves and this patient from harm?
3. What are the normal brainstem reflexes?
4. What determinants need to be established before a patient is declared brain dead?
5. What is a brain flow study?
6. What factors are considered when assessing this patient?

ANSWERS TO CASE #1

1. Nondisclosure of a patient means that no information on the condition or location of the patient is disclosed. If this information has been compromised, then the patient may need to be moved to a different location and security notified.
2. Nurses must be aware at all times of their surroundings and who is around the patient. All individuals must have proper identification, even if a person may be wearing a medical uniform. There is usually an emergency button that can be pushed that will result in an immediate security presence.
3. Normal brainstem reflexes are the ability of the pupils to react and accommodate. There will be a corneal, or blink, reflex. There is a cough and gag reflex when stimulated. The patient would be able to breathe on his own efforts.
4. There must be absent brainstem reflexes, apnea, and a persistent unresponsive coma that is irreversible.
5. A brain flow study is used to demonstrate cerebral brain flow. A negative study indicates that there is no cerebral blood flow.
6. Level of consciousness (LOC); the type of cerebral involvement and damage that has occurred; vital signs, especially blood pressure; what the trajectory of the bullet was; and whether there is other organ involvement. If the patient is a donor, then optimal perfusion of the organs will need to be maintained.

CASE #2

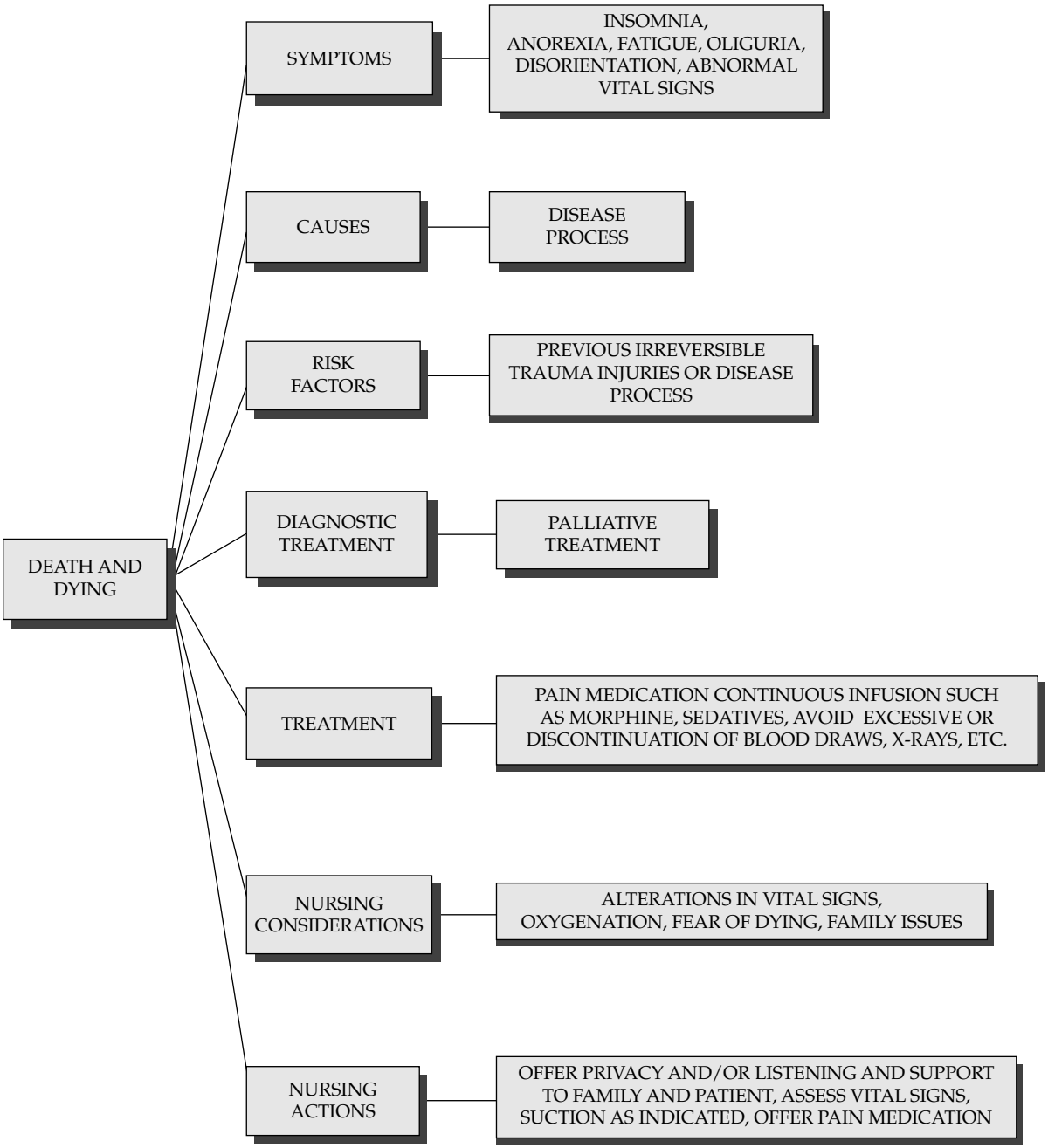
An 87-year-old male has suffered a middle cerebral infarct. The patient is maxed out on vasopressors and is deteriorating regarding his blood pressure and heart rate. He has been exhibiting decerebrate movements. He has already been intubated for 7 days. He is a "DNR," but everything else can be initiated. Hospice is being consulted for a terminal wean. BP now is 80/60, and an idioventricular rhythm of 40 is now present.

Answer the following questions and return by preconference next week.

1. What is the significance of a middle cerebral infarct?
2. What does it mean to be "maxed" out on vasopressors?
3. What factors are addressed in a DNR LT order?
4. What is a terminal wean?
5. What is an idioventricular rhythm?
6. What are decerebrate movements?

ANSWERS TO CASE #2

1. The middle cerebral artery is one of the major arteries that supply the brain, so injury to this area can significantly reduce perfusion to the brain, causing increased intracranial pressure and ischemia.
2. Vasopressors are medications that help raise the blood pressure and cardiac contractility. There is a maximum limit for each drug that can be given. Frequently this occurs when interventions are no longer effective in reversing the condition.
3. DNR LT means "do not resuscitate limited therapy." The factors addressed in a DNR LT order, when there is an acute condition that may cause the patient's death, are the interventions the patient or the patient's family that they want or do not want, such as intubation, vasopressors, cardiac compressions, blood transfusions, tube feedings, and so on. Because this is a legally binding agreement that must be complied with, the nurse must be aware of what is allowed and what is not allowed.
4. A terminal wean means that the patient's status is terminal and has specified the patient has no chance to survive. The terminal wean may consist of weaning the patient from the ventilator, that initiating a morphine drip, administering benzodiazepines for anxiety and pain, and keeping the patient comfortable.
5. An idioventricular rhythm, commonly referred to as a dying heart rhythm, will cause severely decreased perfusion. An idioventricular rhythm requires immediate intervention if the patient's condition is viable. It is characterized by a widened QRS and an absent P wave.
6. Decerebrate movements are abnormal posturing of the body characterized by extension of the extremities. This indicates brainstem damage.



RELIGION EXERCISE

Research two different religions or life philosophies, such as Judaism, Christianity, Islam, Buddhism, Bahaism, Santeria, Mormonism, Shintoism, atheism, and so on. Answer the following questions for both of your choices based on your findings.

1. List cultural and religious practices offered prior to death.

_____

_____

_____

2. Do these practices assist in supporting the patient and family through the stages of dying? Explain.

_____

_____

_____

3. List the types of postmortem care that the religion supports.

_____

_____

_____

4. List how the religion's beliefs determine the finality of how the body is managed. For example, the role of the funeral home, and burial or cremation.

_____

_____

_____

CHAPTER 9

Fluids and Electrolytes and the Acid–Base Balance

MEDICATION FORMS

Listed in the vertical box is a medication. For each of the remaining boxes, list the following:

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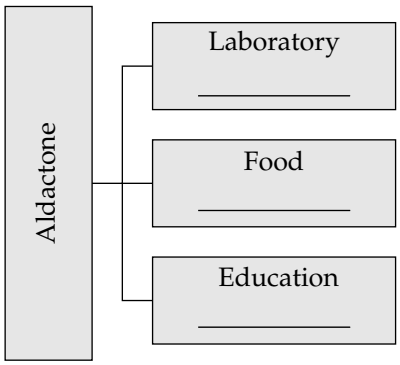

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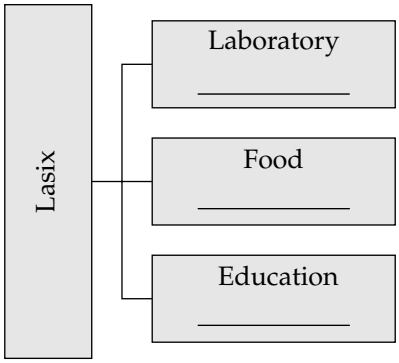

ELECTROLYTE EXERCISE

Complete the following by circling the appropriate answer from the right column. Return by preconference next week.

1. Potassium level of 5.7	hypokalemia, hyperkalemia
2. Sodium level of 119	hyponatremia, hypernatremia
3. Edema reflects interstitial	fluid deficit, fluid excess
4. Excessive urinary output	DI, SIADH
5. ADH is secreted by	hypothalamus, posterior pituitary
6. A pH greater than 7.45 is	acidosis, alkalosis
7. Potassium level of 2.9	hypokalemia, hyperkalemia
8. Sodium level of 150	hyponatremia, hypernatremia
9. Metabolic refers to	lungs, renal
10. Na 156 reflects	dehydration, fluid excess
11. Respiratory rate 42 reflects	hypocapnia, hypercapnia
12. Heart rate 125 reflects	hypovolemia, hypervolemia
13. Urinary output 400 mL/24 hr	polyuria, oliguria
14. Polyuria causes	hypokalemia, hyperkalemia

ANSWERS TO ELECTROLYTE EXERCISE

1. Potassium level of 5.7	hyperkalemia
2. Sodium level of 119	hyponatremia
3. Edema reflects interstitial	fluid excess
4. Excessive urinary output	DI
5. ADH is secreted by	posterior pituitary
6. A pH greater than 7.45 is	alkalosis
7. Potassium level of 2.9	hypokalemia
8. Sodium level of 150	hypernatremia
9. Metabolic refers to	renal
10. Na 156 reflects	dehydration
11. Respiratory rate 42 reflects	hypercapnia
12. Heart rate 125 reflects	hypovolemia
13. Urinary output 400 mL/24 hr	oliguria
14. Polyuria causes	hypokalemia

CASE #1

Mr. Green, a 78-year-old male, comes to the clinic because he felt his heart racing. You obtain a set of vital signs, which are BP 100/62, HR 140, RR 16, Temp 98.6, and O_2 saturation 94. The cardiac rhythm is sinus tachycardia with frequent PVCs. You ask Mr. Green if he is on any medications. His medications consist of Lasix 40 mg twice a day, Vasotec 10 mg daily, and potassium 20 mEq daily. He swears he takes his medications faithfully. He is on a regular diet. His blood sugar is 163. Mr. Green states he had eaten a large amount of his favorite candy (black licorice) before his heart started racing. His potassium comes back at 3.0 mEq.
Answer the following questions and return by preconference next week.

1. What could be the causes of the high heart rate?
2. What diagnostic tests should be ordered?
3. What pharmaceutical interventions should be given?
4. What patient teaching related to this situation should be done?
5. Should the nurse be concerned about the O_2 saturation?

ANSWERS TO CASE #1

1. This is a trick question. Licorice contains glycyrrhizic acid, which is similar to aldosterone and triggers the body to release potassium. Symptoms will result in severe vomiting, fatigue, and irregular heart rate. Lasix can also cause the body to excrete potassium. It is important to know the contents of the patient's food, medications, and herbal supplements. REMEMBER: NEVER assume the obvious.
2. EKG, electrolyte panel, troponin, CPK MB, and CXR
3. Replace the potassium
4. Dietary teaching
5. No, the respiratory rate is normal, and the patient is not symptomatic. The elderly have reduced lung volumes and may have a lower pulse oxygen.

CASE # 2

A 15-year-old female is admitted with diabetic ketoacidosis. She has been a type 1 diabetic for 12 years. She is admitted with Kussmaul's breathing, lethargy, and nausea. She is an avid runner at school. She has been adjusting her insulin and diet because she was concerned about her weight. She has currently placed herself on a 1,200-calorie-a-day diet. She weighs 58.5 kg and is 165 cm tall. Answer the following questions and return by preconference next week.

Lab Work

Na 150	FBS 384	WBC 11	Osmolarity level 350
K 4.0	BUN 34	Hct 42	
Cl 110	Cr 1.2	ABG: pH 7.30, PO_2 80, PCO_2 37, HCO_3 17	
CO2 16	Hb 14	HbA1c 10	

1. What do the sodium, osmolarity, Hgb/Hct, and BUN/Cr all have in common?
2. What does the serum CO2 of 16 and the ABG's indicate?
3. What does the HbA1c indicate?

ANSWERS TO CASE #2

1. They are indicators of probable dehydration. The normal osmolarity level is 280 to 300 mOsm/kg, and a level of 350 indicates dehydration. The BUN/Cr ratio is greater than 20:1, which also will be an indicator of dehydration. The sodium level is within parameters, but it is trending to hypernatremia. Hgb and Hct are both elevated, which is another sign of dehydration.
2. Both of these indicate acidosis. Serum CO2 (bicarbonate) is an indicator of acidosis.
   Normal values:
   pH: Normal: 7.35 to 7.45
   $PaCO_2$ Lungs: Normal: 35 to 45 (alkalosis if below 35, acidosis if above 45)
   HCO_3 (bicarbonate) Metabolic: Normal: 22 to 26 mEq/L (acidosis if below 22, alkalosis if above 26)
   Patient ABGs: pH 7.31, PO2 80, PCO2 37, HCO_3 17
   pH_7.31 is acidosis uncompensated.
   PCO2 37 is within normal limits.
   HCO3 17 is acidosis.
   So this uncompensated metabolic acidosis present in diabetic ketoacidosis.
   Metabolic acidosis can be caused by prolonged diarrhea, ingestion of salicylic acid, lactic acid secondary to anaerobic metabolism, or ketone bodies secondary to insulin deficit.
3. HbA1c is elevated and indicates that the glucose has not been controlled over the past 3 months.
   (The important issue regarding the oxygen is to determine (1) whether the patient is hypoxic, and (2) is there another disease process evident? In this case, she is on room air and the oxygen is within normal limits of 80% to 100%; but, if she was on 100% oxygen, that may indicate an acute lung process such as pneumonia.)

LABORATORY QUIZ

You have the following patients. Name the blood tubes needed and return by preconference next week.

1. Mr. ETOH (Alcohol). The doctor wants to check his ammonia level.
2. Ms. Blood Letting. The doctor wants to check her CBC and coagulation.
3. Mr. Endstage. The doctor wants to check his BUN and creatinine.
4. Mrs. Confused. The doctor wants to check her CBC, ELR, PTT, PT, and ammonia level.
5. Mr. Overdose. The doctor wants to check his Tylenol level and his liver enzymes.
6. Mrs. Coumadin. The doctor needs to check her INR level.
7. Mrs. Transfusion. The doctor needs to check a type and crossmatch and a CBC.
8. Ms. Heart Failure. The doctor needs to check her ELR, BNP, and digoxin level.
9. Mr. Septic Blood. The doctor wants cultures × 2 sites and lactate level.

ANSWERS TO LABORATORY QUIZ

1. Gray top
2. Lavender top and light blue top
3. Green top
4. Lavender top, green top, light blue top, gray top
5. Green top
6. Light blue top
7. Lavender top, red top
8. Green top, lavender top, gold top
9. Gray-top tube, four blood culture bottles—two aerobic, two anaerobic

CHAPTER 10

Caring for the Geriatric Patient

MEDICATION FORMS

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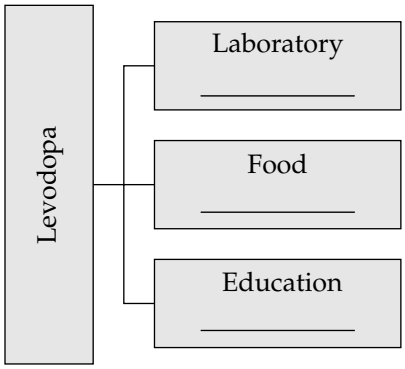

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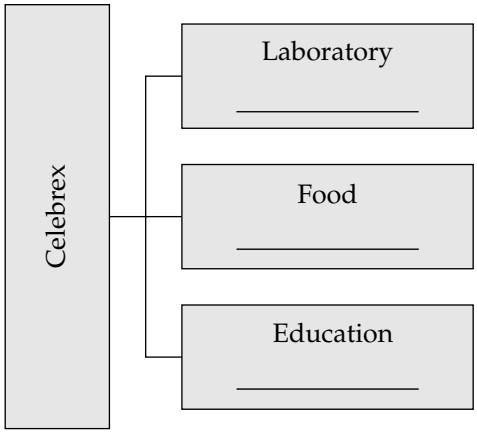

SURVEY ON ELDER CARE

Each student should interview two people of various ages, complete the following questions, and return by preconference next week.

1. At what age (number of years) is someone old?

   _____

2. At what age (number of years) is someone elderly?

   _____

3. At what age (number of years) is someone middle-aged?

   _____

4. Do you believe getting old means becoming forgetful? Explain.

   _____

5. Can you list the problems that the elderly must face?

   _____

6. What do you believe is the annual income of an elderly person?

_____

7. Do you know anyone who is elderly?

_____

8. Do you socialize with that person (if applicable)?

_____

9. How do the elderly get to their doctors, the grocery store, and so on?

_____

10. Have you thought about what will happen when you become elderly?

_____

11. Will you have someone to help you if needed?

_____

12. What should the elderly do if they have no family/friends?

13. Do you believe the elderly are a target for crime?

_____

14. Do you believe the community has a responsibility to its elderly residents?

_____

15. What would be a way to assist the elderly?

_____

16. What is your age?

_____

ELDER CARE CASE

A 74-year-old male with Alzheimer's disease is experiencing short-term memory loss and is currently due for discharge. His wife is worried about his safety at home because she does volunteer work and still drives. The wife states that the patient "frequently wanders off and forgets where he is going or what he is doing." The patient is still able to help with decisions about his care.

What resources could you offer this patient and his wife? Write out your answers and return by preconference next week.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

ANSWERS TO ELDER CARE CASE

1. Contact support groups at the local Alzheimer's Association website.
2. There are tracking devices available, such as GPS in shoes, in case the patient gets lost.
3. There are door alarms with movement sensors that will trigger an alarm noise if the door is opened.
4. Provide a phone with a larger key display and a larger screen text size. Use this phone to display a list of things the patient needs to do.
5. Arrange pre-trip planning, utilizing telemedicine, medication dispensers, and vital sign monitoring.
6. Arrange for a waterproof watch with wireless indoor and outdoor locator and for virtual heath records, a medical advisor, a nutritional status, a cognitive problem prognosis, home help, and a caregiver retreat plan.

CHAPTER 11

Assessment and Treatment of Musculoskeletal System Disorders

MEDICATION FORMS

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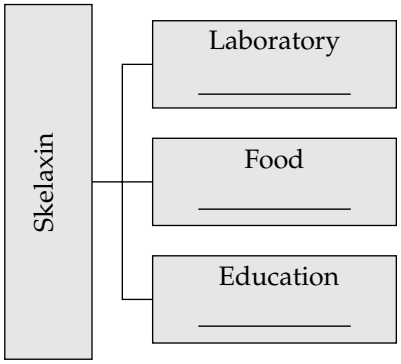

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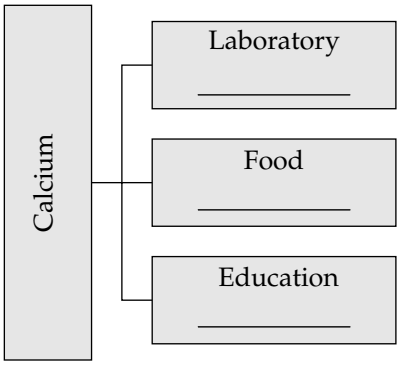


MUSCULOSKELETAL SYSTEM EXERCISE

Choose an athlete who participates in an outdoor sport. Write about the muscles involved when your chosen athlete performs his or her sport. The report should include what each muscle is doing (flexion, extension), what muscle groups it may work with, whether strength or endurance are involved, and what muscles may be antagonistic. Note which muscles are more prone to sports-related injuries and be sure to include the heart muscle in this assignment. This assignment is due by the next clinical preconference.

CASE #1

A 24-year-old female suffered a compound fracture of her right humerus and right radius 8 months ago. Her right arm was placed initially in an external fixator device. She now complains of a severe burning sensation and pain in her right arm complicated by muscle wasting. She has also noticed temperature changes between her arms with a change in color. She was diagnosed with complex regional pain syndrome (CRPS or reflex sympathetic dystrophy).

1. What is CRPS?
2. What causes CRPS?
3. How is it diagnosed?
4. What and where are the signs and symptoms?
5. What is the treatment for this condition?
6. What nursing treatment modalities need to be addressed with this patient?

ANSWERS TO CASE #1

1. CRPS is a painful dysfunction and disuse syndrome characterized by abnormal pain and swelling of the affected extremity. The injury produces overactivity of the sympathetic nervous system. There are different types of CRPS that may involve nerve damage and may become chronic.
2. Some of the causes include trauma, surgery, stroke, shingles, and heart disease.
3. Sympathetic nervous system tests, MRI, and bone scan.
4. Severe burning sensation and pain in patient's right arm, muscle wasting, temperature changes, thickened skin, and contractures.
5. Spinal cord stimulators, nerve blocks, steroids, antiseizure and antidepressant medications, and PT.
6. Nursing treatment modalities that need to be addressed with this patient are:

- Pain
- Body image
- Tissue perfusion
- Emotional support
- Mobility
- Patient teaching about the disease

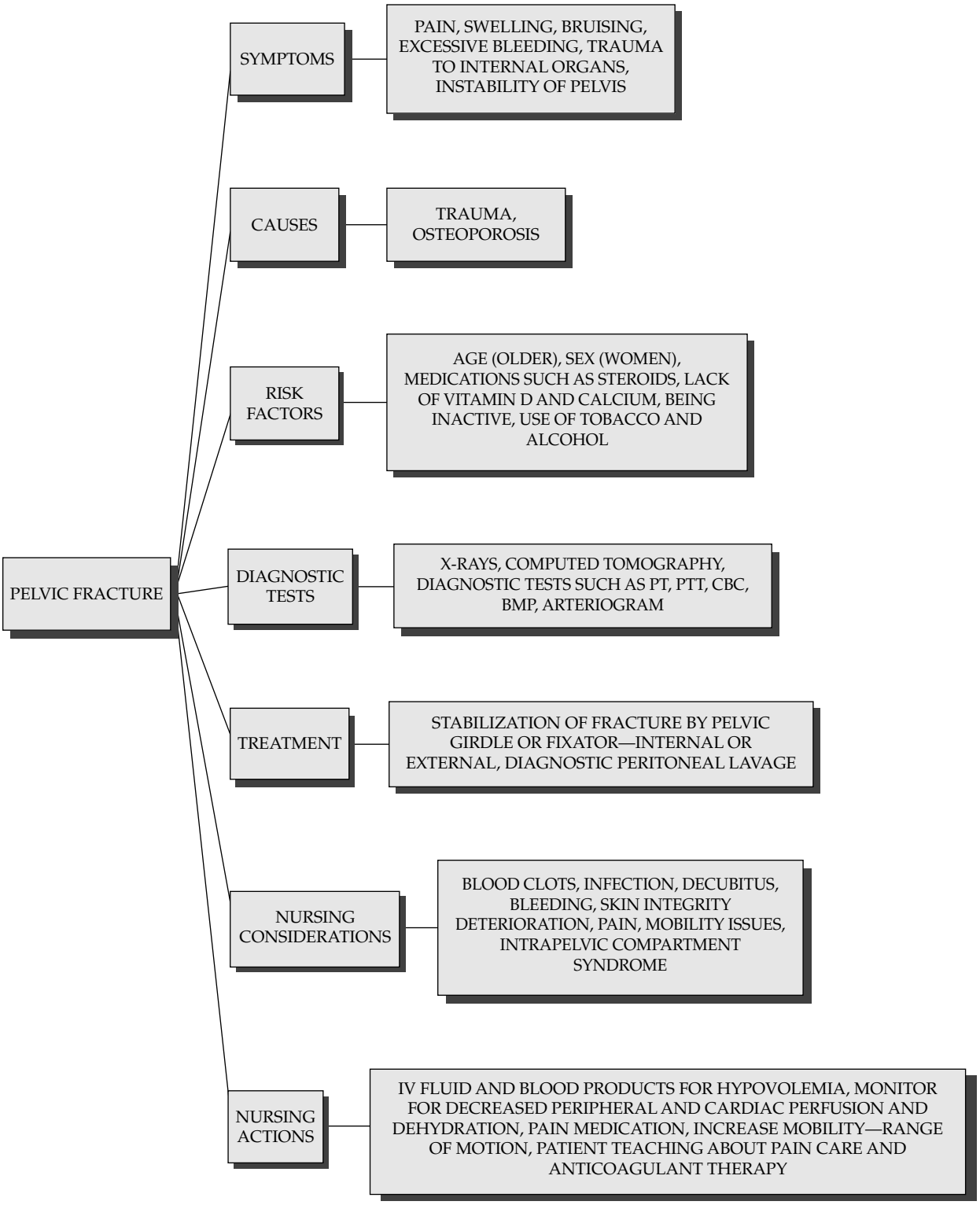
CASE #2

A 56-year-old female had not been seen for 2 days. When her family investigated, she was found on her left side. She had suffered a stroke to her left temporal hemorrhagic subdural without midline shift on CT scan. She has a past medical history of congestive heart disease, chronic obstructive pulmonary disease, deep vein thrombosis, and atrial fibrillation. On admission, she has right-sided weakness and edema to her right-side extremities. Urine is decreased and dark red. Patient has been diagnosed with rhabdomyolysis in addition to her stroke. The creatine kinase (CPK) is 30,000 mcg/mL, myoglobin 1,500 ng/mL, and potassium 5.6. One day later, the nurse has noticed blanching of the right arm, capillary refill greater than 3 seconds, and radial pulse of 1+. The physician was notified immediately, and the patient was diagnosed with CS.

1. What is rhabdomyolysis?
2. What is the significance of this leakage of these proteins and enzymes?
3. What causes rhabdomyolysis?
4. What are the signs and symptoms?
5. How is rhabdomyolysis diagnosed?
6. What treatment should be done?
7. What is compartment syndrome and why is it an emergency?
8. Why is the potassium elevated?

ANSWERS TO CASE #2

1. Rhabdomyolysis is the rapid destruction of the myoglobin protein in the urine. CPK, which assists with chemical reactions in the cells, is also released. Since tissue is damaged, the tissue will release potassium from cells, causing hyperkalemia.
2. These enzymes will clog the filtering tubules in the kidneys, causing renal failure.
3. The more common causes are: muscle trauma, burns, infection, immobility, drug intoxication (especially cocaine), myopathies, myxedema coma, statins, psychiatric drugs, hypothermia, and hyperthermia.
4. Signs and symptoms include stiffness and weakness, dark urine, nausea, and confusion.
5. Rhabdomyolysis is diagnosed with lab studies: complete blood count, complete metabolic panel, liver function tests, urinalysis, and CPK.
6. Stop the offending drug, hydration, and treatment with sodium bicarbonate and Mannitol (osmotic diuretic).
7. Compartment syndrome is a condition in which damage to an area causes edema and increased pressure, which in turn causes compromised tissue circulation and function. Irreversible changes can occur in hours and may require surgical intervention (fasciotomy).
8. The potassium may be elevated because of dehydration but also may be elevated because of potassium being released from the muscle tissue because of the injury.



CHAPTER 12

Pharmacology, Patient Safety, and Laboratory Tests

PHARMACOLOGY EXERCISE

Answer the following questions and return by preconference next week.

1. What would the nurse monitor for in order to assess for signs or symptoms of nephrotoxicity and ototoxicity?
2. Are there nursing actions that can prevent nephrotoxicity? If so, explain.
3. List the laboratory values that should be monitored when a drug is metabolized.
4. List the most serious and adverse effect that can occur with antibiotics.
5. List what may be considered as reactions to an administered medication. What is the difference between a side effect and an adverse reaction?
6. At what times should antibiotic medication be given?
7. List the five rights of medication administration.

ANSWERS TO PHARMACOLOGY EXERCISE

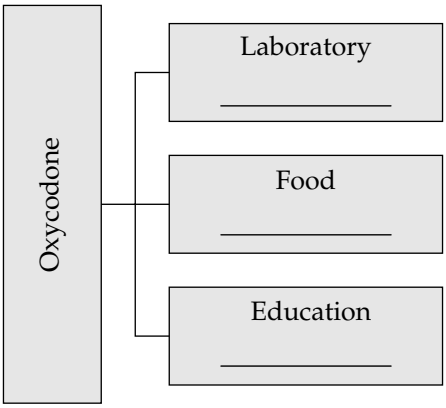
1. Changes in renal function (BUN and creatinine) and changes in hearing (detectable with audiometry only).
2. Adequate hydration, lower dose of medication, and longer duration of frequency.
3. Liver function tests.
4. Anaphylactic reaction.
5. Skin rash, urticaria, difficulty in breathing, seizures, and anaphylactic reaction. A side effect is a symptom found after taking a medication that is a natural consequence of the drug. An adverse reaction is a side effect that is of a serious nature and may be life threatening for the patient.
6. Some antibiotics should not be consumed with certain foods and drinks. Others should not be taken with food in your stomach—these would normally be taken about an hour before meals, or two hours after.
7. Right patient, right medication, right dosage, right route, and right time.

MEDICATION FORMS

Listed in the vertical box is a medication. For each of the remaining boxes, list the following:

Box 1: List a laboratory result you would need to monitor. Explain the significance of the laboratory test to the medication.
Box 2: List one food that may interact with the medication. Explain the significance of the food item to the medication.
Box 3: List one patient educational instruction you would give to the patient regarding the medication. Explain the significance of the instruction to the medication.

List other educational information you could provide this patient. Are there websites you can refer to? What about travel overseas and health issues? How should the medication be stored?



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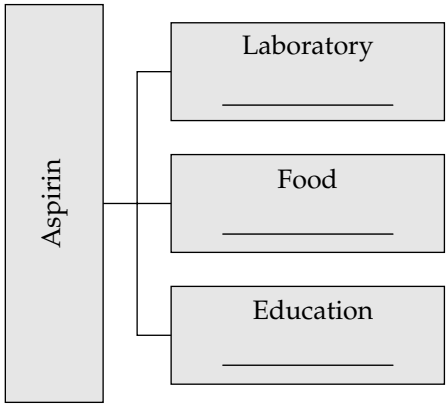


MEDICATION SURVEY

Answer the following questions and return by preconference next week.

1. Take a walk to your neighborhood pharmacy, or look at the drugs in your medicine cabinet. List at least six of the various medications available over the counter (OTC).

   _____
   _____
   _____
   _____
   _____
   _____.

2. Read the labels of several of the medications (paying special attention to the respiratory and leg cramp medications). Do any of the OTC medications contain what normally would be a prescription medication? If so, list those medications.

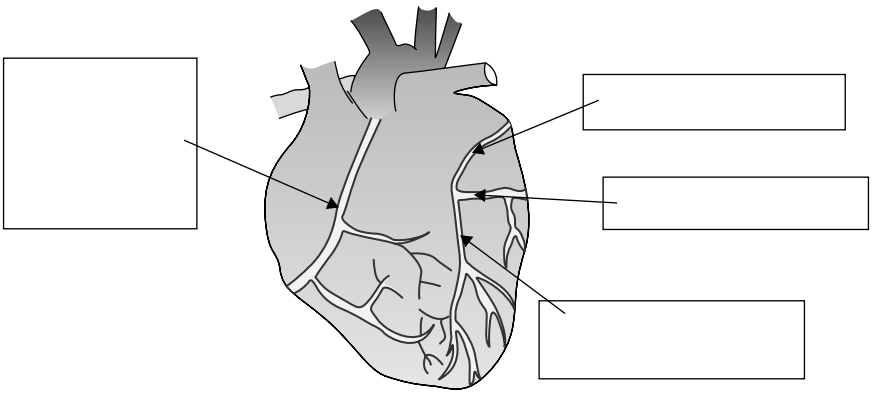
   _____
   _____
   _____
   _____
   _____.

CHAPTER 13

Critical Care Nursing

ANATOMY EXERCISE

Label the coronary arteries of the heart and return by preconference next week. Label the artery that is considered the "widow maker."



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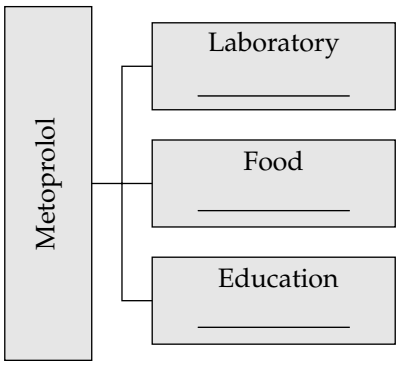

List other educational information you could provide this patient. Are there websites you can refer? What about travel overseas and health issues? How should the medication be stored?

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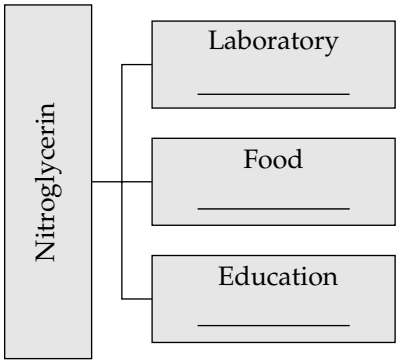

CRITICAL THINKING EXERCISE

Match the lettered critical care situations in the boxes to the appropriate interventions listed below. Return by preconference next week.

A. Low B/P	B. Low heart rate	C. Low urinary output
D. High B/P	E. High heart rate	F. High urinary output
G. Low respiratory rate	H. High respiratory rate	I. Unresponsive

Consider a pacemaker __

Consider a fluid bolus __

Consider Narcan __

Consider DDAVP __

Consider Diamox __

Consider Nipride __

Consider a CT scan __

Consider vasopressors __

Consider cardioversion __

ANSWERS TO CRITICAL THINKING EXERCISE

Match the lettered critical care situations in the boxes to the appropriate interventions listed below.

A. Low B/P	B. Low heart rate	C. Low urinary output
D. High B/P	E. High heart rate	F. High urinary output
G. Low respiratory rate	H. High respiratory rate	I. Unresponsive

Consider a pacemaker B

Consider a fluid bolus C

Consider Narcan G

Consider DDAVP F

Consider Diamox H

Consider Nipride D

Consider a CT scan I

Consider vasopressors A

Consider cardioversion E

CHAPTER 14

Emergency Nursing

MEDICATION FORMS

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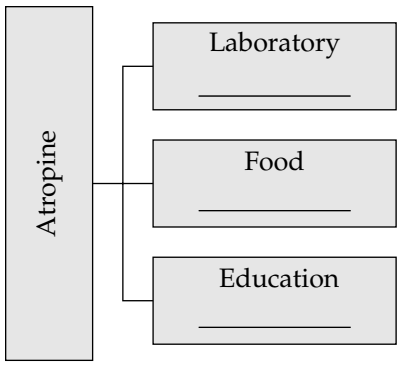

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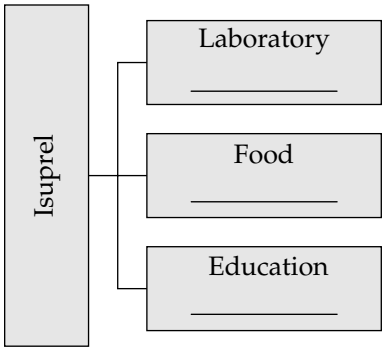

EMERGENCY NURSING EXERCISE

Describe what might be an emergent situation. List the interventions that should be implemented for the condition you described. Discuss your chosen emergent situation and compare it to a "rapid response" situation (a condition that can be treated without transport to the critical care unit). Return by preconference next week.

CRASH CART EXERCISE

List the equipment you would find in a "crash cart." Briefly explain what the equipment is and what it is used for. Return by preconference next week.

CASE #1

Mr. Smith is a 78-year-old African American male who was admitted 2 days ago for uncontrolled HTN. On admission, Mr. Smith's vital signs were BP 187/101, HR 102, RR 28, T 98.8°F, and O_2 saturation 93%. Mr. Smith was given 100 mg of Spironolactone PO, one- time, 1-inch dose of nitroglycerin ointment, O_2 at 4 L/min per NC, and 2 mg morphine intravenously pushed (IVP) for chest pain. One hour after admission, his vital signs were BP 153/88, HR 92, and O_2 saturation 95%. The physician then started the patient on Capoten 50 mg orally twice daily in addition to the Spironolactone 50 mg twice daily. To prevent deep vein thrombosis (DVT), the physician ordered Lovenox 80 mg SC daily and 81 mg aspirin daily.

Mr. Smith was told he would be discharged in the morning because his blood pressure was controlled. You notice Mr. Smith's call bell is on. On arrival to his room, you see Mr. Smith on the floor but he is responding to commands. The patient care technician (PCT) is taking a set of vital signs that are BP 82/35, HR 167, RR 38, and O_2 saturation 88%. A rapid response is called.

Answer the following questions and return by preconference next week.

1. Based on the information presented, what "could" be the underlying problems?
2. What interventions would you implement for the underlying problems?

ANSWERS TO CASE #1

1. There may be many reasons.
   a. BP has dropped to 82/sys. The extra medication that was ordered may have been too much because of his age, or there could be a neurological event such as a stroke.
   b. Hyperkalemia
   c. Retroperitoneal bleed, because Lovenox can cause retroperitoneal bleeds.
   d. The patients pulse oxygen is low, so there may be a respiratory problem present.

2. There may be many interventions.
   a. The patient's BP should be assessed frequently, BP meds should be withheld, and nitropaste (NTP) removed from patient. If there is no contraindication, give a fluid bolus of isotonic fluids.
   b. Hyperkalemia: Draw an electrolyte panel. The results will determine whether the patient is experiencing hyperkalemia. Spironolactone can cause hyperkalemia. If the patient is experiencing hyperkalemia, give the patient 10% calcium gluconate one amp IVP slowly. This will help to reduce the high potassium level.
   c. If the patient is experiencing a bleed: The patient should be typed and cross-matched for blood. A CT scan may need to be completed when the patient is more stable.
   d. The low pulse should be evaluated by chest x-ray, arterial blood gases, continuous O_2 saturation, and application of oxygen. Evaluate for bilateral breath sounds; the patient may need a VQ scan to evaluate for pulmonary emboli.

The patient should be transferred to the critical care unit for each of these potential problems.

CASE #2

Have students evaluate the following scenarios and prioritize which patients should be seen first. Answers are to be returned by preconference next week.

The nurse has been assigned to six patients. Which two patients would need to be assessed immediately?

Patient 1: A 20-year-old asthmatic patient with respiratory rate of 24 and O_2 saturation 98%; patient is wheezing and awaiting discharge

Patient 2: A 48-year-old, overweight, uncontrolled diabetic patient complaining of dull epigastric pain

Patient 3: A 30-year-old male who has suffered first-degree burns on the posterior surface of his left arm

Patient 4: A 24-year-old with a spiral fracture of right tibia

Patient 5: A 30-year-old female who has mild smoke inhalation, respiratory rate of 20, O_2 saturation 95, and in no acute distress

Patient 6: A 20-year-old complaining of fibromyalgia

ANSWERS TO CASE #2

The patients should be prioritized as listed here:

Patients 2 and 5: The diabetic patient needs to be evaluated because the epigastric pain may be an impending heart attack. Diabetics may have minimal symptoms because of their neuropathy and undetected coronary artery disease. Anyone with smoke inhalation also needs to be evaluated because there will continued inflammation and edema from the smoke irritant that may impede the airway

Patient 3: The first-degree burn is the least serious of burns and is not extensive

Patients 6 and 4: The patient with fibromyalgia and the patient with a fractured tibia need intervention but do not need immediate treatment

Patient 1: Even though the first patient has asthma, she has been stabilized and is ready to be discharged.

CHAPTER 15

Hematology, the Endocrine System, and Related Disorders

MEDICATION FORMS

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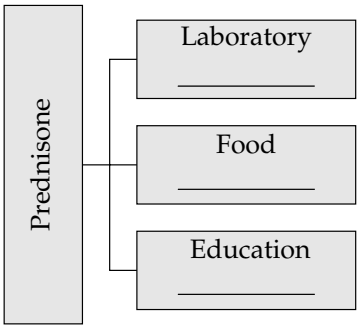

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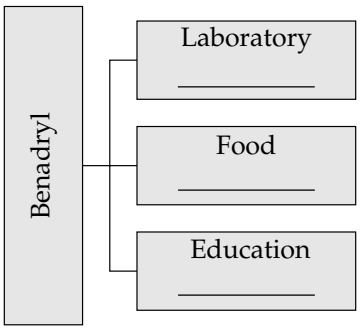


HEMATOLOGY EXERCISE

Answer the following questions and return by preconference next week.

1. Which blood cells are responsible for transporting oxygen?
2. What is the defender of the body against infection?
3. What cells are involved in the blood's ability to coagulate?
4. What nutritional component is needed for production of RBCs?
5. What organ secretes erythropoietin under conditions of low oxygen levels?
6. Which WBCs destroy microorganisms by ingestion (phagocytes)?
7. What type of granulocyte stimulates the inflammatory response (a mediator)?
8. What type of WBC housed in the immune system provides immunity?
9. In which organ are excess PLTs stored?
10. What is the term used to describe the development or formation of blood cells?

Enter "T" for "True" or "F" for "False" after the following statements:

11. Blood cell production increases in anemic conditions. _____
12. The elderly patient has built up an immune response to infections. _____
13. Neutropenic patients are at great risk for infections. _____
14. Neutropenia is caused solely by an autoimmune disease. _____
15. Thrombocytopenia is an excess amount of PLTs. _____
16. Alcoholism can improve thrombocytopenia. _____
17. Polyuria is a symptom of DIC. _____
18. Hemophilia is the development of blood cells. _____

ANSWERS TO HEMATOLOGY EXERCISE

1. Red blood cells
2. White blood cells
3. Platelets
4. Adequate nutrition (vitamins)
5. Kidneys
6. Neutrophils
7. Basophils
8. Lymphocytes
9. Spleen
10. Hematopoiesis
11. Blood cell production increases in anemic conditions. F
12. The elderly patient has built up an immune response to infections. F

13. Neutropenic patients are at great risk for infections. T
14. Neutropenia is caused solely by an autoimmune disease. F
15. Thrombocytopenia is an excess amount of PLTs. F
16. Alcoholism can improve thrombocytopenia. F
17. Polyuria is a symptom of DIC. F
18. Hemophilia is the development of blood cells. F

CRITICAL THINKING EXERCISE #1

A 24-year-old African American female is admitted with sickle cell crisis. The patient is complaining of substernal chest pain 5/10, her skin is cool to touch, she is slightly diaphoretic, her HR is 120, BP 92/62, and O_2 Saturation 92% on room air. Stat basic metabolic panel, magnesium, phosphorous, arterial blood gas, complete blood count, troponin, and creatine phosphokinase-MB (CPK-MB). Type and screen and transfuse 2 units of leukoreduced split-pack red blood cells. Patient's blood type is O positive. Patient has had a mild febrile reaction in prior transfusions and is to receive Tylenol 650 mg and Benadryl 25 mg po 30 minutes before transfusion.

Answer the following questions and return by preconference next week.

1. What is sickle cell disease?
2. What are the complications of sickle cell disease?
3. How long will red blood cells last?
4. Why would the sickle cell patient be more susceptible to infection?
5. What are the risks of blood transfusions?
6. For how long is a type and cross match good before it expires?
7. What types of blood can be transfused to this patient?
8. What is a febrile nonhemolytic reaction?
9. What is the time limit for a unit of blood to be transfused?
10. What is a split pack? What is leukoreduced blood?

ANSWERS TO CRITICAL THINKING EXERCISE #1

1. Sickle cell disease is an autoimmune disease that causes the red blood cells to become adhesive and abnormally shaped, which causes blockage of blood vessels and extreme pain. This disease is common among individuals of Mediterranean, African American, and Hispanic descent.
2. Complications include: acute chest syndrome, stroke, pulmonary hypertension (HTN), blindness, skin ulcers, and gallstones.
3. Red blood cells last 120 days, but in sickle cell anemia the RBCs only last 10 to 20 days.
4. The spleen, which helps with immunity, is usually damaged in sickle cell anemia.
5. The risks of blood transfusions include transfusion reaction, hepatitis B and C, HIV, bacterial contamination, malaria, and Lyme disease.
6. A type and crossmatch is good for only 72 hours.
7. This patient can only receive O positive and O negative blood.
8. A febrile nonhemolytic reaction is exhibited by a fever, chills, and a headache. It is caused antigens on PLTs, lymphocytes, and granulocytes.

9. A unit of blood must be transfused within 4 hours.
10. A split pack is a unit of blood divided into two units. A normal unit of blood may be 300 to 400 mL, so the pack will be split into two. Since sickle cell patients may have trouble with large amounts of fluid, split packs are used to prevent volume overload. Leukoreduced means that there was a removal of WBCs from the blood components to reduce an allergic response.

CRITICAL THINKING EXERCISE #2

A 28-year-old Caucasian male is admitted with complaints of numerous spontaneous ecchymotic bruises. Patient complains of dyspnea, weight loss, and bone pain. Diagnostic tests reveal enlargement of the liver and lymph nodes, anemia, and elevated WBC. A bone marrow aspiration from the pelvic bone was performed. Conscious sedation was performed for the procedure. The bone marrow reveals a diagnosis of acute lymphoblastic leukemia (ALL).

Answer the following questions and return by preconference next week:

1. What is acute lymphoblastic leukemia (ALL)?
2. What are the complications of ALL?
3. What is the prognosis for ALL?
4. What are the treatments for this condition?
5. What is conscious sedation?

ANSWERS TO CRITICAL THINKING EXERCISE #2

1. Acute lymphoblastic leukemia (ALL) is cancer of the blood and bone marrow, causing immature WBCs.
2. ALL can spread to all the organs, causing extensive damage.
3. ALL usually occurs in children, especially those with Down syndrome, and in older adults, but it can occur at any age. The prognosis depends on when the cancer was detected, whether it is acute or chronic, and the age of the patient.
4. Chemotherapy, stem cell transplantation, radiation, and alternative therapies.
5. Conscious sedation occurs when a patient is given a combination of drugs in small doses to help the patient to relax and not feel pain, but still remain able to respond throughout the procedure. The patient will be monitored with frequent vital signs and pulse oximetry to prevent complications. The patient should have someone to drive him home after the procedure and monitor him until fully awake.

ENDOCRINE MATCHING EXERCISE

Match the appropriate gland or disease in the left column to the hormone or condition in the right column. Complete this exercise and return by preconference of next week's clinical.

Cushing's syndrome	Dwarfism
Adrenal cortex	Hyperthyroidism
Myxedema	Master gland
Gigantism	DM type I
Pituitary	Cortisol insufficiency
Parathyroid	Mineralocorticoid
Hyposecretion of growth hormone	DM type II
Graves' disease	Increased glucocorticoid
Addison's disease	Hypersecretion of GH
No insulin	Hypothyroidism
Hyperosmolar hyperglycemic nonketotic syndrome	Kidney stones

ANSWERS TO ENDOCRINE MATCHING EXERCISE

Match the appropriate gland or disease in the left column to the hormone or condition in the right column.

Cushing's syndrome	Increased glucocorticoid
Adrenal cortex	Mineralocorticoid
Myxedema	Hypothyroidism
Gigantism	Hypersecretion of GH
Pituitary	Master gland
Parathyroid	Kidney stones
Hyposecretion of growth hormone	Dwarfism
Graves' disease	Hyperthyroidism
Addison's disease	Cortisol insufficiency
No insulin	DM type I
Hyperosmolar hyperglycemic nonketotic syndrome	DM type II

CRITICAL THINKING EXERCISE #3

A 15-year-old female was admitted with DKA. She has been a type 1 diabetic for 12 years. She has not been feeling well for the past 3 days. She is admitted with Kussmaul breathing, lethargy, and nausea. She is an avid runner at school. She has been adjusting her insulin and diet because she was concerned about her weight. She has currently placed herself on a 1,200-calorie-a-day diet. She normally weighs 58.5 kg and is 165 cm tall. She currently weighs 53 kg.

Lab Work

Na 150	FBS 384	WBC 11	Osmolarity level 350
K 4.0	BUN 34	Hct 42	
Cl 110	Cr 1.2	ABG pH 7.30 PO_2 80	PCO_2 37 HCO_3 17
CO_2 16	Hb14	Hb A1C 10	

She is ordered a basic metabolic panel every 2 hours with blood sugar every hour, and ABGs every 8 hours. The patient has been placed on an insulin drip, and the nurse must mix the first bag of insulin administration. The patient was given 1,000 NSS bolus, and then NSS is given at 200/hr. On assessment, the patient had dry mucous membranes, delayed capillary refill, and has lost 10 pounds within the past 2 weeks.

Answer the following questions and return by preconference next week.

1. What is Kussmaul breathing?
2. Why is IV fluid given at such a fast rate?
3. How would the nurse first detect fluid overload?
4. Why are the lab work and ABGs checked so frequently?
5. What considerations would the nurse address with children with diabetes?
6. How would the nurse mix the first bag of insulin?

ANSWERS TO CRITICAL THINKING EXERCISE #3

1. Kussmaul breathing is a rapid deep breathing present in DKA due to the breakdown of ketones. The breath is characterized by a "fruity" odor.
2. The IV fluid is given at such a fast rate because the patient is severely dehydrated due to excessive fluid losses due to polyuria. The fluids needs to be replaced to maintain hemodynamic status.
3. The first sign of fluid overload is usually an increase in respiratory rate and crackles in the lungs, with a drop in oxygenation.

4. ABGs are done to see whether acidosis is resolving. When acidosis is being corrected, the potassium is moved by the sodium potassium pump from the serum extracellular to the intracellular, thereby decreasing the serum potassium level. Potassium will also be diluted by rehydration. It is essential to do repeat electrolytes to monitor changes.
5. Adolescent children need emotional and psychological support. Since the child is an adolescent, there may be a rebellion against guidance or the disease. Physical activity is important, but the patient needs to understanding dietary intake and the need for monitoring blood glucose levels before, during, and after activities.
6. Insulin is a high-alert drug, and when mixed it must be checked by another nurse. The nurse would mix 1 mL of regular insulin to 100 mL of normal saline to make a 1 to 1 concentration. The bag and tubing must be labeled properly with date, time, and initials.

Reproductive System Functions, Assessment, Diseases, and Treatments

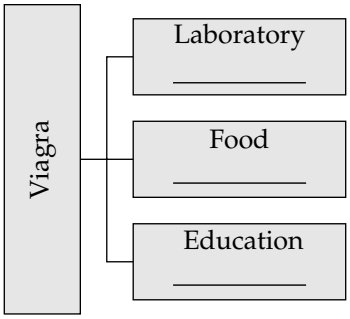
MEDICATION FORMS

Listed in the vertical box is a medication. For each of the remaining boxes, list the following:

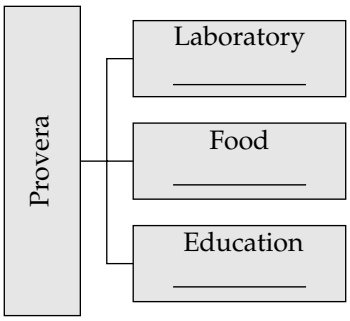
Box 1: List a laboratory result you would need to monitor. Explain the significance of the laboratory test to the medication.
Box 2: List one food that may interact with the medication. Explain the significance of the food item to the medication.
Box 3: List one patient educational instruction you would give to the patient regarding the medication. Explain the significance of the instruction to the medication.

List other educational information you could provide this patient. Are there websites you can refer? What about travel overseas and health issues? How should the medication be stored? Does the medication being administered interfere with other medications?

Listed in the vertical box is a medication. For each of the remaining boxes, list the following:



Box 1: List a laboratory result you would need to monitor. Explain the significance of the laboratory test to the medication.
Box 2: List one food that may interact with the medication. Explain the significance of the food item to the medication.
Box 3: List one patient educational instruction you would give to the patient regarding the medication. Explain the significance of the instruction to the medication.



List other educational information you could provide this patient. Are there websites you can refer? What about travel overseas and health issues? How should the medication be stored? Does the medication being administered interfere with other medications?

BODY SURFACE AREA CALCULATION QUIZ

Answer the following question and return by preconference next week.

1. The patient is receiving Cisplatin for ovarian cancer. The dose ordered is 80 mg/m^2. The patient's height is 165 cm (65 inches) and her weight is 100 kg (220 lbs). How many milligrams of Cisplatin would the patient receive?
2. For a child who weighs 30 pounds and is 30 inches tall. 35 mg/m^2 of medication A is ordered. How many milligrams should the child receive?

ANSWERS TO BODY SURFACE AREA CALCULATION QUIZ

1. There are many formulas to calculate BSA.
   The formula used here is the Mostellar formula for calculating BSA using centimeters to express height and kilograms to express weight:

$$\sqrt{\frac{165\,\text{cm} \times 100\,\text{kg}}{3,600}} = 2.139\,\text{m}^2$$

   This height and weight would produce a BSA of 2.14 m^2.
   80 mg/m^2 × 2.139 m^2 = 171.12 mg or 171 mg
   The patient should receive 171 mg of Cisplatin.
2. For pediatric calculations, the Mostellar formula can also be used expressing height in inches and weight in pounds:

$$\sqrt{\frac{\text{Weight (lbs)} \times \text{inches}}{3,131}}$$

$$\sqrt{\frac{30\,\text{lbs} \times 30\,\text{inches}}{3,131}} = 0.537\,\text{m}^2$$

   0.537 m^2 × 35 mg/m^2 = 18.795 mg
   The child should receive 18.8 mg of medication A.

REPRODUCTIVE SURVEY EXERCISE

Instructions: Make copies of the following form and then complete the following survey by interviewing two women and two men in the reproductive age range (between ages 21 and 40). The reproductive survey exercise results are due by preconference next week.

1. Are you aware of the self-screening assessment that you should perform monthly? Yearly?
2. Do you perform those self-screening assessments? Why or why not?
3. Does your family have a history of reproductive diseases or cancer?
4. Do you participate in your annual health screening?
5. What tests does your primary physician perform?
6. If you found a symptom (such as a mass or discharge), where would you research for more information?
7. Do you find discussing the reproductive system difficult?
8. Where did you learn about health screening or self-assessment?
9. Do you have lifestyle habits that put you at greater risk?
10. Do you use birth control? What type do you use and what made you choose that type?

REPRODUCTIVE SYSTEM QUIZ

Complete the following questions and return by preconference next week.

1. What laboratory test is performed to test for prostate cancer?
2. What gland passes through the prostate gland?
3. What term is used to describe when the urethral meatus in the man is on the dorsal surface?
4. Where does sperm meet the ovum?
5. The female breasts develop during what stage of life?
6. Which hormone stimulates milk production?
7. Which hormone assists in maintaining female sexual characteristics?
8. What is the infectious childhood disease that will affect male fertility?
9. If the ovum is not fertilized, what is the discharge of blood called?
10. What medical conditions of the bowel and bladder result from weakened vaginal walls?
11. What medications are used to prevent unwanted pregnancies?
12. What is the male surgical form of birth control?
13. Where do ectopic pregnancies occur?
14. What term is used to describe the cessation of menses in the aging female?
15. A TURP is performed for what medical condition?

ANSWERS TO REPRODUCTIVE SYSTEM QUIZ

1. PSA
2. Ejaculatory gland
3. Epispadias
4. In the fallopian tube
5. Puberty
6. Prolactin
7. Progesterone
8. Mumps
9. Menses
10. Cystocele and rectocele
11. Contraceptives
12. Vasectomy
13. Fallopian tube
14. Menopause
15. Enlarged prostate

CRITICAL THINKING EXERCISE

A 40-year-old African American male is admitted for surgical radical prostatectomy for prostate cancer. His past medical history involves atrial fibrillation and hyperlipidemia, and he continues to smoke two packs of cigarettes a day. He is a full-time radiology technician. His initial PSA was 6ng/mL. His lab work shows calcium 14mg/dL, potassium 4 mEq/L, sodium 135, and phosphorous 2 mg/dL. He is having some periods of confusion. Initial CAT scan of brain is negative. Pupils are equal and reactive.

Answer the following questions and return by preconference next week.

1. What is PSA and what does it indicate?
2. Does a positive PSA indicate cancer?
3. What are this patient's risk factors?
4. What is a radical prostatectomy?
5. What are the side effects of a prostatectomy?
6. What is the normal level of calcium?
7. What are the effects of high calcium levels?
8. What are the primary causes of hypercalcemia and what other diseases can cause it?
9. What is the normal phosphorous level?
10. How are high calcium levels resolved?

ANSWERS TO CRITICAL THINKING EXERCISE

1. PSA is a protein that is produced by the prostate gland. PSA levels of 4.0 ng/mL or lower are normal.
2. There can false positive PSA tests. An elevated PSA could be due to an inflammation or due to drug use and does not necessarily indicate cancer. A urine culture should be performed to rule out infection, and a biopsy should be performed to confirm cancer.
3. The risk factors are his age, race, smoking history, and his exposure to radiation.
4. It is an operation that removes the prostate and surrounding tissues.
5. Side effects may include urinary and bowel incontinence and erectile dysfunction.
6. The normal level of calcium is 8 to 10 mg/dL. High levels of calcium are caused by different types of cancer, immobility, dehydration, nausea, and vomiting.
7. Elevated calcium levels can cause muscle twitching, confusion, and coma.
8. High levels of calcium are caused by different types of cancer, immobility, dehydration, nausea, and vomiting. Other diseases that can cause hypercalcemia are: bone cancer, hyperparathyroidism, vitamin D toxicity, granulomatous diseases, Cushings disease, and Addison's disease.
9. The normal phosphorous level is 3 to 4.5 mg/dL. Calcium and phosphorous have an inverse relationship—so when calcium is high, the phosphorous will be low.
10. Address the underlying cause, rehydration, exercise, bisphosphonates, and calcitonin.

CHAPTER 17

Career Goals and Planning: Professional Identity, Job Search, and Licensing Exam

CLINICAL EVALUATION

Check the appropriate box to reflect the student's level of knowledge or skill.

Student: _____

Date: _____

Course: _____

Core Learning Outcome	Satisfactory Behavior	Needs Improvement	Unsatisfactory Behavior
1. Practices within an established framework for the adult system			
2. Assesses patient physiological, cultural, spiritual, and developmental variables			
3. Assesses patients' internal/external environment lines of defense			
4. Selects appropriate nursing diagnoses in priority order			
5. Identifies disease process, signs, and symptoms for nursing diagnosis			
6. Able to identify specific, measurable goals and short-term outcomes for patient system			
7. Able to choose nursing prevention and intervention, appropriate diagnosis, and outcomes			
8. Able to prioritize needs based on physiological necessity			
9. Implements nursing prevention/interventions safely			
10. Maintains a safe environment for the patient			
11. Administers medications safely (if applicable)			

(*continued*)

CLINICAL EVALUATION (*continued*)

12. Follows guidelines for infection control			
13. Provides care in an organized and timely manner			
14. Maintains professional behavior; adheres to dress protocol			
15. Complies with attendance protocols			
16. Communicates appropriate information to other health team members			
17. Documents assessment findings according to protocol			
18. Demonstrates legal and ethical behavior			
19. Seeks out new learning opportunities			