

NURSPT 021
PHARMACOLOGY II

WEEK 1

Module 1: Immunizing Agents, Immunosuppression Therapy and Cancer Medication

1. Discuss the principles of immunosuppressive therapy.
2. List and identify commonly used immunosuppressants.
3. Differentiate between active and passive immunity.
4. Explain the pharmacodynamics, pharmacokinetics, and pharmacotherapeutics of immunizing agents.
5. List, identify and outline schedules of administration and describe active immunizing agents.
6. List, identify and outline schedules of administration and describe passive immunizing agents.
7. Define common terminology used to describe cancer and its pharmacological treatment.

Module 2: Antimicrobial Medication

1. Differentiate and explain the major classifications of antimicrobial drugs.
2. Recognize common antibiotic-resistant microbes.
3. Outline general considerations of antimicrobial therapy selection.
4. State the pharmacodynamics, pharmacotherapeutics and pharmacokinetics of antibiotics.
5. Identify drugs used to treat urinary tract infections.
6. Identify drugs used to treat Mycobacterial Infections.
7. Identify appropriate treatment for each of the following viral infections.
8. Identify appropriate drug treatment for each of the selected fungal infections.
9. Describe parameters that govern the choice of antiretroviral drug therapy.
10. Identify the pharmacotherapeutics, pharmacodynamics and pharmacokinetics of drugs used to treat HIV and AIDS.
11. Describe the pathophysiology of protozoan, parasitic, helminthic and ectoparasitic diseases/infections and discuss appropriate drug therapy for each.

WEEK 2

Module 3: Cardiovascular and Renal Medications

1. Identify and describe the actions, side effects, contraindications, nursing implications and patient education of drugs used to treat congestive heart failure.
2. Describe the action, side effects, contraindications, nursing implications and patient education of drugs used to treat a client with angina pectoris.
3. Identify and describe the actions, uses, contraindications side effects, nursing implications and patient education used to treat a client with hypertension.
4. Identify and describe the actions, uses, contraindications, side effects nursing implications and patient education used to treat a client receiving anticoagulation therapy.
5. Identify and describe the actions, uses, contraindications, side effects, nursing implications and patient education used to treat a client receiving diuretic therapy.

WEEK 3

Module 4: Respiratory Medications

1. Restate the pathophysiology involved with upper respiratory system diseases/disorders.
2. Describe the pharmacokinetics, pharmacotherapeutics, and pharmacodynamics of antitussive drugs.
3. Describe the use of oral and nasal decongestants.
4. Summarize the use of first and second generative antihistamines in relieving symptoms of allergies.
5. Restate the pathophysiology involved with disease/conditions of the lower respiratory system.
6. Describe the pharmacokinetics, pharmacotherapeutics and pharmacodynamics of mucolytic drugs.
7. Describe the use of bronchodilators.
8. Identify anti-inflammatory agents used in the management of respiratory disorders.

WEEK 4

Module 4: Endocrine Medications

1. Identify and describe medications used for individuals receiving treatment for pituitary disorders including indications, methods of action, side effects, contraindications and patient education.
2. Identify and describe medications used for individuals receiving treatment for thyroid disorders including methods of action, side effects, contraindications and patient education.
3. Identify the different types of insulin and describe the indications, methods of action, side effects, contraindications and patient education related to insulin administration.
4. Identify the different types of oral anti-diabetic agents, indications, method of action, side effects contraindications and patient education receiving oral anti-diabetic agents.

WEEK 5

Module 5: Central Nervous System Drugs-Part I

1. Differentiate between sedative and hypnotic agents.
2. Discuss barbituates and their use as a sedative.
3. List and identify selected barbituates.
4. Discuss benzodiazepines and their use as a sedative-hypnotic.
5. List and identify selected benzodiazepines.
6. List and discuss non-barbituate, non-benzodiazepine sedative hypnotic agents and their use.

WEEK 6

Module 6: Central Nervous System Drugs-Part II

7. Discuss musculoskeletal relaxants and their use.
8. List and identify musculoskeletal relaxants.
9. Describe the pathophysiology of epilepsy and seizure disorders.
10. Discuss the use of anti-convulsants.
11. List and identify anti-epileptic agents.
12. Identify various classes of drugs and medications in each class used as Anti-Parkinson agents.

Module 7: Gastrointestinal Medications

1. Review the anatomy and physiology of the upper gastrointestinal(UGI) tract.
2. Restate the pathophysiology of the upper gastrointestinal system disease/disorders.
3. Describe the treatment of Helicobacter Pylorii infection.
4. Compare and contrast the pharmacodynamics, pharmacotherapeutics, and pharmacodynamics of various Proton Pump Inhibitors (PPIs).
5. Differentiate the pharmacodynamics, pharmacotherapeutics, and pharmacokinetics of various H₂ receptor antagonists.
6. Explain how antacids work to neutralize the gastric pH.
7. Describe G.I. stimulants, how they work and the reasons for their use.
8. Describe the primary classifications of antiemetics and the name of one drug in each classification.
9. Restate the pathophysiology of the lower gastrointestinal tract diseases/disorder.
10. Discuss anti-flatulants and their use.
11. Discuss the pharmacodynamics, pharmacotherapeutics, and pharmacokinetics of various anti-diarrhea agents and laxatives.
12. Identify and describe the drug groups used to treat inflammatory bowel disease.

NURSPT 021 PHARMACOLOGY II
Curriculum Content Week 1

Central Nervous System Drugs

Goal Statement

The goal of this module is to provide the learner with key information on drugs affecting the Central Nervous System.

Module Description

Central Nervous System Drugs module provides a review of the Central Nervous System. Sedative, hypnotics, musculoskeletal relaxants, anticonvulsants, and antiparkinsonian agents are emphasized.

Objectives

Upon completion of this module, the learner will be able to:

1. Differentiate between sedative and hypnotic agents.
2. Discuss barbiturates and their use as a sedative.
3. List and identify selected barbiturates.
4. Discuss benzodiazepines and their use as a sedative-hypnotic.
5. List and identify selected benzodiazepines.
6. List and discuss non-barbiturate, non-benzodiazepine sedative-hypnotic agents and their use.
7. Discuss musculoskeletal relaxants and their use.
8. List and identify musculoskeletal relaxants.
9. Describe the pathophysiology of epilepsy and seizure disorders.
10. Discuss the use of anticonvulsants.
11. List and identify antiepileptic (anticonvulsant) agents.
12. Identify various classes of drugs, and medications in each class, used as Antiparkinson Agents.

**Psychiatric Technician Program
Curriculum Content**

Instructional Plan: Term 2 Week 1

Unit Title: NURSPT 021 PHARMACOLOGY I

Theory Hours this week: 3

Skills Lab / Clinical Hours this week: 0

Curriculum Content/Hrs	Theory Objectives	Content Outline	Methods of Instruction	Assignments	Clinical Hours	Skills Lab/Clinical Objectives
Central Nervous System Drugs PHARM/ 0.25	Objective 1 Differentiate between sedative and hypnotic agents	A. Describe Sedative B. Describe Hypnotic C. Review the sleep cycle and the stages of sleep	Lecture Discussion Reading Transparencies Study guide Audiovisual aids	The following suggested learning activities apply for Content Outline Objectives 1-12.	N/A	N/A
Central Nervous System Drugs PHARM/ 0.25	Objective 2 Discuss barbiturates and their use as a sedative	A. Mechanism of action B. Drug effects C. Uses D. Side effects and adverse effects E. Toxicity and management of overdose F. Laboratory tests G. Nursing implications H. Patient education	Group Discussion Identify nursing interventions for the side-effects of the selected medication. <u>Methods of Evaluation:</u> Testing Discussion Questions Case Studies Observation	Required Reading In Pharmacology textbook, read chapters and information on topics listed in Column 1. • Sedative/hypnotics • Sleep • Barbiturates • Benzodiazepines • Non-barbiturate, non-benzodiazepine sedative-hypnotic agents • Musculoskeletal Relaxants • Epilepsy • Anticonvulsants/Antiepileptic Agents • Antiparkinson Agents	N/A	N/A
Central Nervous System Drugs PHARM/ 0.25	Objective 3 List and identify selected barbiturates.	A. Aprobarbital (Alurate) B. Pentobarbital (Nembutal) C. Phenobarbital (Solfoton) D. Secobarbital (Seconal) E. Others			N/A	N/A
Central Nervous System Drugs PHARM/ 0.25	Objective 4 Discuss benzodiazepines and their use as a sedative-hypnotic.	A. Mechanism of action B. Drug effects C. Uses D. Side effects and adverse effects E. Toxicity and management of overdose F. Nursing implications G. Patient education			N/A	N/A
Central Nervous System	Objective 5 List and identify	A. Diazepam (Valium) B. Lorazepam (Ativan)			N/A	N/A
				<u>Group Activity</u>		

Curriculum Content/Hrs	Theory Objectives	Content Outline	Methods of Instruction	Assignments	Clinical Hours	Skills Lab/Clinical Objectives
System Drugs PHARM/ 0.25	selected benzodiazepines.	<p>C. Estazolam (Prozom)</p> <p>D. Quazepam (Doral)</p> <p>E. Temazepam (Restoril)</p> <p>F. Others</p>		Develop a patient teaching plan related to sedatives and hypnotics		
Central Nervous System Drugs PHARM/ 0.25	Objective 6 List and discuss non-barbiturate, non-benzodiazepine sedative-hypnotic agents and their use.	<p>A. Antihistamines – diphenhydramine (Benadryl), doxylamine (Unisom)</p> <ol style="list-style-type: none"> Mechanism of action Drug effects Uses Side effects and adverse effects Toxicity and management of overdose Nursing implications Patient education <p>B. Melatonin – classified as a dietary supplement, not a medication</p> <ol style="list-style-type: none"> Mechanism of action Drug effects Uses Side effects and adverse effects Toxicity and management of overdose Nursing implications Patient education <p>C. Ramelteon (Rozerem) – a melatonin receptor stimulant</p> <ol style="list-style-type: none"> Mechanism of action Drug effects Uses Side effects and adverse effects Toxicity and management of overdose Nursing implications Patient education <p>D. Zolpidem (Ambien), zaleplon</p>			N/A	N/A

Curriculum Content/Hrs	Theory Objectives	Content Outline	Methods of Instruction	Assignments	Clinical Hours	Skills Lab/Clinical Objectives
Central Nervous System Drugs PHARM/ 0.25	Objective 7 Discuss musculoskeletal relaxants and their use.	(Sonata) and eszopiclone (Lunesta) - Benzodiazepine receptor agonists (bind to GABA receptors) 1. Mechanism of action 2. Drug effects 3. Uses 4. Side effects and adverse effects 5. Toxicity and management of overdose 6. Nursing implications 7. Patient education			N/A	
Central Nervous System Drugs PHARM/ 0.25	Objective 8 List and identify musculoskeletal relaxants.	A. Mechanism of action B. Drug effects C. Uses D. Side effects and adverse effects E. Toxicity and management of overdose F. Nursing implications G. Patient education		Small group discussion List the safety considerations associated with musculoskeletal relaxants. Identify one nursing intervention for each of the safety considerations.	N/A	
Central Nervous System Drugs	Objective 9 Describe the pathophysiology of epilepsy and seizure disorders.	A. Primary (idiopathic epilepsy) B. Secondary epilepsy C. Seizure D. Convulsion E. International Classification of			N/A	

Curriculum Content/Hrs	Theory Objectives	Content Outline	Methods of Instruction	Assignments	Clinical Hours	Skills Lab/Clinical Objectives
PHARM/ 0.25		Seizures F. Unclassified seizures G. Status epilepticus		Homework Case Scenario (Provided by instructor). Develop a nursing care plan for a seizure patient taking anticonvulsant medications.		
Central Nervous System Drugs PHARM/ 0.25	Objective 10 Discuss the use of anticonvulsants.	A. Mechanism of action B. Drug effects C. Uses D. Side effects and adverse effects E. Plasma levels, therapeutic ranges F. Nursing implications G. Patient education			N/A	N/A
Central Nervous System Drugs PHARM/ 0.25	Objective 11 List and identify antiepileptic agents.	A. Barbiturates B. Benzodiazepines C. Carbamazepine D. Divalproex E. Hydantoins F. Oxazolindiones G. Newer medications 1. Zonisamide (Zonegran) 2. Tiagabine Hydrochloride (Gabitril) 3. Levetiracetam (Keppra)			N/A	N/A
Central Nervous System Drugs PHARM/ 0.25	Objective 12 Identify various classes of drugs, and medications in each class, used as Antiparkinson Agents.	A. Review the pathophysiology of Parkinson Disease B. Neuroprotective Therapy 1. Mechanism of action 2. Uses 3. Side effects and adverse effects 4. Interactions 5. Nursing implications 6. Patient education C. Anticholinergic Agents 1. Mechanism of action 2. Uses			N/A	N/A

Curriculum Content/Hrs	Theory Objectives	Content Outline	Methods of Instruction	Assignments	Clinical Hours	Skills Lab/Clinical Objectives
		3. Side effects and adverse effects 4. Interactions 5. Nursing implications 6. Patient education D. Dopaminergic Agents 1. Mechanism of action 2. Uses 3. Side effects and adverse effects 4. Interactions 5. Nursing implications 6. Patient education				

Key:

For All Programs:									
A/P	Anatomy and Physiology	NP	Nursing Process	CCC	Culturally Congruent Care	M/S	Medical/Surgical Nursing		
		PE	Patient Education	EOL	End-of-Life Care	REH	Rehabilitation Nursing		
CDJS	Communicable Diseases	PHARM	Pharmacology	For VN Programs only:					
COM	Communication	LDR	Leadership	FUN	Nursing Fundamentals	NS	Nursing Science Fundamentals		
NUT	Nutrition	SUP	Supervision	MAT	Maternity Nursing	MD	Mental Disorders		
PSY	Psychology	ETH	Ethics and Unethical Conduct	PED	Pediatric Nursing	DD	Dev. Disabilities		
G/D	Normal Growth and Development	CT	Critical Thinking	GER	Gerontological Nursing				

NURSPT 021 PHARMACOLOGY II
Curriculum Content Week 2

Analgesics, Anti-inflammatory, and Anti-Rheumatoid Agents

Goal Statement

The goal of this module is to provide the learner with key information on drugs affecting pain and inflammation.

Module Description

Analgesics, Anti-inflammatory, and Anti-Rheumatoid Agents module provides a review of the physiology of pain. Discussion of geriatric and pediatric considerations for pain control; analgesics, non-steroidal anti-inflammatory agents, and anti-rheumatoid agents are emphasized.

Objectives

Upon completion of this module, the learner will be able to:

1. Describe the physiology of pain and different types of pain.
2. Describe the use of opioid analgesics.
3. Identify opioid analgesics according to dosages and strengths.
4. Describe the most common opioid antagonists and how they are used.
5. Describe indications, uses and precautions for non-steroidal anti-inflammatory agents (NSAIDs).
6. Identify various chemical classes of non-opioid, non-steroidal anti-inflammatory drugs (NSAIDs).
7. Identify and discuss selected medications included in the classification of NSAIDs and how they are used.
8. List and discuss various anti-rheumatoid agents and how they are used.

Psychiatric Technician Program Curriculum Content

Instructional Plan: Term _____ Week 2 _____

Unit Title: NURSPT 021 PHARMACOLOGY II

Theory Hours this week: **3**

Skills Lab / Clinical Hours this week: **0**

Curriculum Content/Hrs	Theory Objectives	Content Outline	Methods of Instruction	Assignments	Clinical Hours	Skills Lab/Clinical Objectives
Analgesics, Anti-inflammatory and Anti-rheumatoid agents PHARM/.5	Objective 1 Describe the physiology of pain and different types of pain.	A. Pain threshold B. Pain tolerance C. Types of pain 1. Acute 2. Chronic 3. Somatic 4. Visceral 5. Referred 6. Neuropathic 7. Phantom pain 8. Cancer 9. Psychogenic D. Outline geriatric considerations for pain control and opioid administration. E. Discuss the inflammatory response and its relationship to pain generation. F. Review pediatric considerations for pain management 1. Reyes Syndrome	Lecture Discussion Reading Transparencies Study guide Audiovisual aids <u>Methods of Evaluation:</u> Testing Discussion Questions Case Studies Observation	The following suggested learning activities apply for Content Outline Objectives 1-8. <u>Required Reading</u> In Pharmacology Textbook, read chapters and information on topics listed in Column I. <ul style="list-style-type: none"> • Physiology of pain • Geriatric Considerations • Opioid analgesics and antagonists • Anti-inflammatory and anti-rheumatoid agents 	N/A	N/A
Analgesics, Anti-inflammatory and Anti-rheumatoid agents PHARM/.5	Objective 2 Describe the use of opioid analgesics.	A. Chemical structure B. Mechanism of action C. Drug effects D. Therapeutic uses E. Side effects and adverse effects F. Toxicity and management of overdose 1. Opioid tolerance 2. Physical dependence 3. Opioid withdrawal (abstinence syndrome) G. Interactions		<u>Homework</u> Student will develop, from a patient scenario provided by the instructor, a patient teaching plan on caring for a patient taking opioid analgesics	N/A	N/A

Curriculum Content/Hrs	Theory Objectives	Content Outline	Methods of Instruction	Assignments	Clinical Hours	Skills Lab/Clinical Objectives
Analgesics, Anti-inflammatory and Anti-rheumatoid agents PHARM/ .25	Objective 3 Identify opioid analgesics according to dosages and strengths.	H. Laboratory results I. Nursing implications J. Patient education A. Morphine Sulfate B. Codeine Sulfate C. Fentanyl (Duragesic, Sublimaze) D. Methadone HCL (Dolophine) E. Propoxyphene HCL (Darvon)			N/A	N/A
Analgesics, Anti-inflammatory and Anti-rheumatoid agents PHARM/ .25	Objective 4 Describe the most common opioid antagonists and how they are used.	A. Naloxone HCL (Narcan) B. Naltrexone HCL (Revia, Texan)		Group Activity Students will develop a culturally appropriate pain management assessment tool for a specified culture. Group will present to the class the rationale of the selected tool.	N/A	N/A
Analgesics, Anti-inflammatory and Anti-rheumatoid agents PHARM/ .25	Objective 5 Describe indications, uses and precautions for non-steroidal anti-inflammatory agents (NSAIDs).	A. Action B. Drug effects C. Uses D. Side effects and adverse effects E. Toxicity and management of overdose F. Nursing implications G. Patient education			N/A	N/A
Analgesics, Anti-inflammatory and Anti-rheumatoid agents PHARM/ .25	Objective 6 Identify various chemical classes of non-opioid, non-steroidal anti-inflammatory drugs (NSAIDs).	A. Propionic Acids 1. Ibuprofen 2. Naproxen B. Acetic Acids 1. Indomethacin 2. Sulindac C. Fenamic Acids D. Cox-2 Inhibitors 1. Celecoxib (Celebrex)			N/A	N/A

Curriculum Content/Hrs	Theory Objectives	Content Outline	Methods of Instruction	Assignments	Clinical Hours	Skills Lab/Clinical Objectives
		<p>E. Acetylsalicylic acid 1. aspirin (ASA) F. Carboxylic Acids derivative 1. Ketorolac (Toradol) G. Nonacetylated H. Naphthylalkanones (nonacidic) I. Oxicams</p>				
Analgesics, Anti-inflammatory and Anti-rheumatoid agents PHARM/.5	Objective 7 Identify and discuss selected medications included in the classification of NSAIDs and how they are used.	<p>A. Aspirin B. Indomethacin C. Ibuprofen D. Ketorolac (Toradol) E. Celecoxib (Celebrex) F. Others</p>		Homework Find current internet article (within 2 years) on NSAID risks.	N/A	N/A
Analgesics, Anti-inflammatory and Anti-rheumatoid agents PHARM/.5	Objective 8 List and discuss various anti-rheumatoid agents and how they are used.	<p>A. Anti-gout 1. Allopurinol 2. Colchicine 3. Probenecid 4. Sulfapyrazone B. Anti-arthritis 1. Auranofin 2. Aurothioglucose 3. Etanercept</p>			N/A	N/A

Key:

For All Programs:	NP	Nursing Process	CCC	Culturally Congruent Care	M/S	Medical/Surgical Nursing
A/P	PE	Patient Education	EOL	End-of-Life Care	REH	Rehabilitation Nursing
C/D/S	PHARM	Pharmacology	For VN Programs only:			For PT Programs only:
COM	LDR	Leadership	FUN	Nursing Fundamentals	NS	Nursing Science Fundamentals
NUT	SUP	Supervision	MAT	Maternity Nursing	MD	Mental Disorders
PSY	ETH	Ethics and Unethical Conduct	PED	Pediatric Nursing	DD	Dev. Disabilities
G/D	CT	Critical Thinking	GER	Gerontological Nursing		

NURSPT 021 PHARMACOLOGY II
Curriculum Content Week 3

Respiratory System Medications

Goal Statement

The goal of this module is to provide the learner with key information on drugs affecting the Respiratory System.

Module Description

Respiratory System Medications module provides a review of the anatomy, physiology, and pathophysiology of the upper and lower Respiratory System. Respiratory system diseases/disorders and their drug treatments are emphasized.

Objectives

Upon completion of this module, the learner will be able to:

1. Restate the pathophysiology involved with upper respiratory system diseases/disorders.
2. Describe the pharmacokinetics, pharmacotherapeutics, and pharmacodynamics of antitussive drugs.
3. Describe the use of oral and nasal decongestants.
4. Summarize the use of first and second-generation antihistamines in relieving symptoms of allergies.
5. Restate the pathophysiology involved with diseases/conditions of the lower respiratory system.
6. Describe the pharmacokinetics, pharmacotherapeutics, and pharmacodynamics of mucolytic drugs.
7. Describe the use of bronchodilators.
8. Identify anti-inflammatory agents used in the management of respiratory disorders.

**Psychiatric Technician Program
Curriculum Content**

Instructional Plan: Term 2 _____ Week 3 _____

Unit Title: NURSPT 021 PHARMACOLOGY II

Theory Hours this week: 3

Skills Lab / Clinical Hours this week: 0

Curriculum Content/Hrs	Theory Objectives	Content Outline	Methods of Instruction	Assignments	Clinical Hours	Skills Lab/Clinical Objectives
Respiratory System Medications PHARM/.5	Objective 1 Restate the pathophysiology involved with upper respiratory system diseases/disorders.	A. Review the anatomy and physiology of the upper respiratory system B. Common cold C. Allergic and seasonal rhinitis D. Sinusitis E. Pharyngitis F. Laryngitis G. Influenza	Lecture Discussion Reading Transparencies Study guide Audiovisual aids <u>Lecture/Discussion</u> <u>In-class Assignment</u> Develop a patient and family education plan for a client receiving Guaifenesin.	The following suggested learning objectives apply for Content Outline Objectives 1-8. <u>Required Reading</u> <ul style="list-style-type: none"> In Pharmacology textbook, read chapters and information on topics listed in Column I. Upper and lower respiratory disease. Antitussive, decongestants, antihistamines, expectorants, mucolytics, bronchodilators, and respiratory anti-inflammatory drugs. 	N/A	N/A
Respiratory System Medications PHARM/0.25	Objective 2 Describe the pharmacokinetics, pharmacotherapeutics, and pharmacodynamics of antitussive drugs.	A. Dextromethorphan HCL (Benlyn) B. Codein C. Hydrocodone bitartrate (Hycodan)			N/A	N/A
Respiratory System Medications PHARM/0.25	Objective 3 Describe the use of oral and nasal decongestants.	A. Oral Decongestants 1. Pseudoephedrine (Sudafed) 2. Phenylpropanolamine (Rhimdecon) B. Topical Decongestants (Nasal) 1. Ephedrine Nasal 2. Oxymetazoline (Afrin) 3. Others			N/A	N/A
Respiratory System Medications PHARM/0.25	Objective 4 Summarize the use of first and second-generation antihistamines in relieving symptoms of allergies.	A. Pharmacotherapeutics B. Pharmacodynamics C. Pharmacokinetics D. Contraindications E. Side effects and adverse effects F. Nursing implications G. Patient education	<u>Small Group Activity</u> Have students identify the sedative effect of 4 antihistamines, and discuss which antihistamines are no longer available over-the-counter, which must		N/A	N/A

Curriculum Content/Hrs	Theory Objectives	Content Outline	Methods of Instruction	Assignments	Clinical Hours	Skills Lab/Clinical Objectives
Respiratory System Medications PHARM/.5	Objective 5 Restate the pathophysiology involved with diseases/ conditions of the lower respiratory system.	<ul style="list-style-type: none"> A. Review the anatomy and physiology of the lower respiratory system B. Pneumonia C. Acute bronchitis D. Chronic obstructive pulmonary diseases <ul style="list-style-type: none"> 1. Chronic bronchitis 2. Emphysema 3. Asthma <ul style="list-style-type: none"> a. Classifications E. Cystic fibrosis 	<p>be requested from a pharmacist but do not require a prescription.</p> <p><u>In-class Assignment</u> Have students write instructions step by step for administering medications via MDI.</p> <p><u>Methods of Evaluation:</u> Testing Discussion Questions Case Studies Observation</p>		N/A	N/A
Respiratory System Medications PHARM/0.25	Objective 6 Describe the pharmacokinetics, pharmacotherapeutics, and pharmacodynamics of mucolytic drugs.	<ul style="list-style-type: none"> A. Acetylcysteine (Mucomyst) B. Dornase alfa (Pulmozyme) 			N/A	N/A
Respiratory System Medications PHARM/.5	Objective 7 Describe the use of bronchodilators.	<ul style="list-style-type: none"> A. Beta-agonists (sympathomimetics) <ul style="list-style-type: none"> 1. Albuterol (Proventil) 2. Isoproterenol sulfate (Medihaler) 3. Others B. Anticholinergic agents <ul style="list-style-type: none"> 1. Ipratropium bromide (Atrovent) C. Xanthine Derivatives <ul style="list-style-type: none"> 1. Theophylline (Slo-phyllin) 	<p><u>Critical Thinking Exercise</u> Study Guide 3.1</p>		N/A	N/A

Curriculum Content/Hrs	Theory Objectives	Content Outline	Methods of Instruction	Assignments	Clinical Hours	Skills Lab/Clinical Objectives
Respiratory System Medications PHARM/.5	Objective 8 Identify anti-inflammatory agents used in the management of respiratory disorders.	A. Glucocorticoid steroids B. Mast cell stabilizers Leukotriene receptor antagonists (Singulair)	<u>Small Group Activity</u> The net drug effect of anti-inflammatory agents listed in Objective 8 are relaxation of the bronchial smooth muscles. Identify 2 drugs in each category A, B, and C, and discuss route of administration, nursing assessment, and patient education for each drug.		N/A	N/A

Key:

For All Programs:	NP	Nursing Process	CCC	Culturally Congruent Care	M/S	Medical/Surgical Nursing
A/P Anatomy and Physiology	PE	Patient Education	EOL	End-of-Life Care	REH	Rehabilitation Nursing
CDIS Communicable Diseases	PHARM	Pharmacology	For VN Programs only:	For VN Programs only:	For PT Programs only:	For PT Programs only:
COM Communication	LDR	Leadership	FUN	Nursing Fundamentals	NS	Nursing Science Fundamentals
NUT Nutrition	SUP	Supervision	MAT	Maternity Nursing	MD	Mental Disorders
PSY Psychology	ETH	Ethics and Unethical Conduct	PED	Pediatric Nursing	DD	Dev. Disabilities
G/D Normal Growth and Development	CT	Critical Thinking	GER	Gerontological Nursing		

NURSPT 021 PHARMACOLOGY II
Curriculum Content Week 4

Medications Used to Modify Behavior in the Treatment of Developmental Disorders

Goal Statement

The goal of this module is to provide the learner with key information on drugs that are used to help modify behavior in the treatment of behavioral and developmental disorders.

Module Description

This module provides an overview of medications commonly used to treat behavioral and developmental disorders. Key medications, including the targeted behaviors and nursing considerations are emphasized. The nursing process is applied to identify how these medications may be used to improve outcomes for clients with a behavioral and/or developmental disorder.

Objectives

Upon completion of this module, the learner will be able to:

1. Discuss the rationale for using medications to help modify behavior in the treatment of behavioral and developmental disorders.
2. Identify and describe medications commonly used to treat behavioral issues in individuals with developmental disorders, including targeted behaviors and nursing considerations.
3. Apply the nursing process to the administration of medications used to influence or modify behavior.
4. Identify important concepts for patient/family education related to the administration of medication used to influence or modify behavior.

Psychiatric Technician Program Curriculum Content

Instructional Plan: Term 2 Week 4

Unit Title: NURSPT 021 PHARMACOLOGY II

Theory Hours this week: 3

Skills Lab / Clinical Hours this week: 0

Curriculum Content/Hrs	Theory Objectives	Content Outline	Methods of Instruction	Assignments	Clinical Hours	Skills Lab/Clinical Objectives
<p>Medications used to modify behavior in the treatment of developmental mental disorders</p> <p>PHARM/1.0</p>	<p>Objective 1 Discuss the rationale for using medications to help modify behavior in the treatment of behavioral and developmental disorders.</p>	<p>A. Medications can be helpful in decreasing severe behavioral problems that prevent some individuals with developmental disorders from functioning effectively at home or in school.</p> <p>B. Targeted behaviors include:</p> <ol style="list-style-type: none"> 1. Self-injurious behavior 2. Aggression, agitation 3. Severe tantrums 4. Repetitive, ritualistic behavior 5. Impulsivity and hyperactivity, distraction 6. Social isolation and withdrawal <p>C. Nursing Considerations-</p> <ol style="list-style-type: none"> 1. Use of medication for modifying behavior should be reserved for appropriate target disorders and syndromes. 2. Many medications are used "off label" <ol style="list-style-type: none"> a. not approved by the FDA specifically for use in children and/or for these purposes b. must monitor both therapeutic and adverse effects very closely c. Only risperidone (Risperdal) has been approved for the treatment of targeted behaviors in 	<p>Lecture Discussion Reading Transparencies Study guide Audiovisual aids</p> <p><u>Methods of Evaluation:</u> Testing Discussion Questions Case Studies Observation</p>	<p>Internet Resources Study Guide 4.1 Major Brain Structures Implicated in Autism Spectrum Disorders www.nimh.nih.gov/health/publications/autism</p> <p>Required Reading</p> <ul style="list-style-type: none"> • In Pharmacology textbook, read chapters and information on topics listed in Column 1. • Medications used to modify behavior in the treatment of Behavioral and Developmental Disorders: <ul style="list-style-type: none"> ○ Antidepressants ○ Mood stabilizers (anticonvulsants) ○ CNS stimulants ○ Benzodiazepines 	<p>N/A</p>	<p>N/A</p>

Curriculum Content/Hrs	Theory Objectives	Content Outline	Methods of Instruction	Assignments	Clinical Hours	Skills Lab/Clinical Objectives
		<p>autistic children (irritability, aggression, deliberate self-injury and temper tantrums).</p> <p>3. Medications used to modify behavior in children and adolescents with I/DD require greater monitoring and the use of lower doses and slower dosage increases than in the general population.</p>				
<p>Medications used to modify behavior in the treatment of developmental mental disorders</p> <p>PHARM/ 1.0</p>	<p>Objective 2 Identify and describe medications commonly used to treat behavioral issues in individuals with developmental disorders, including targeted behaviors and nursing considerations.</p>	<p>A. Autism Spectrum Disorders (ASD) also known as Pervasive Developmental Disorders</p> <ol style="list-style-type: none"> 1. Atypical antipsychotics – olanzapine (Zyprexa), risperidone (Risperdal) <ol style="list-style-type: none"> a. Targeted behaviors – aggression, self-injury, agitation, tantrums b. Nursing considerations – <ol style="list-style-type: none"> i. Children with ASD may not respond the same as other children or adults. ii. Side effects can include weight gain and sedation. c. Only risperidone (Risperdal) has been approved for treatment of behaviors in autistic children. <ol style="list-style-type: none"> i. irritability, aggression, deliberate self-injury and temper tantrums 2. Selective Serotonin Reuptake Inhibitors - SSRI's fluoxetine (Prozac), sertraline (Zoloft) 				

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		<p>a. Targeted behaviors – anxiety, depression and/or OCD to decrease frequency of repetitive, ritualistic behavior and improve social interaction.</p> <p>b. Nursing considerations – black box warning for potential of increased suicidal thinking/attempts in children.</p> <p>3. CNS stimulants – methylphenidate (Ritalin)</p> <p>a. Targeted behaviors – work to decrease impulsivity and hyperactivity</p> <p>b. Nursing considerations – side effects can include decreased appetite and difficulty sleeping</p> <p>B. Attention-Deficit and Disruptive Behavior Disorders</p> <p>1. Non-stimulant medication, atomoxetine (Strattera) – approved to treat ADHD in children 6-12 years old.</p> <p>a. Targeted behaviors – decrease impulsivity and hyperactivity</p> <p>b. Nursing considerations – monitor for the following side effects:</p> <p>i. Long-term use can slow a child's growth</p> <p>ii. May cause suicidal thoughts or behavior</p> <p>iii. Reports of sudden death in children and adolescents with serious heart problems</p>				

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		<p>or congenital heart defects who have taken this medication.</p> <p>2. CNS stimulants – methylphenidate (Ritalin), amphetamine (Adderall)</p> <p>a. Targeted behaviors –</p> <ol style="list-style-type: none"> i. decrease impulsivity and hyperactivity ii. improve concentration and ability to learn <p>b. Nursing considerations –</p> <p>monitor for:</p> <ol style="list-style-type: none"> i. decreased appetite and difficulty sleeping ii. repetitive movements or sounds ('tics') iii. flat affect <p>3. Beta Blockers - nadolol, atenolol, propranolol</p> <p>a. Targeted behaviors –</p> <ol style="list-style-type: none"> i. decrease aggression, self-injurious behavior or hyperactivity <p>b. Nursing considerations.</p> <ol style="list-style-type: none"> i. Beta blockers are cardiac medications, monitor for bradycardia, sx of hypotension, fatigue <p>C. Dual Diagnosis (Developmental Disability and Psychiatric Disorder)</p> <ol style="list-style-type: none"> 1. Mood disorders – <ol style="list-style-type: none"> a. Antidepressants - SSRI's (fluoxetine, paroxetine) <ol style="list-style-type: none"> i. Targeted behaviors – aggression, self injurious behavior, stereotypy's, 				

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		<ul style="list-style-type: none"> ii. compulsive behaviors and distraction. ii. Nursing considerations – generally good side effect profile, but fluoxetine has been found to aggravate aggression in some individuals with I/DD. SSRI's are stimulating, give in AM. b. Antidepressants – mirtazapine <ul style="list-style-type: none"> i. Targeted behaviors – aggression, self injurious behavior, irritability, hyperactivity, anxiety, depression, and insomnia ii. Nursing considerations – use caution in bipolar ind. in depressive phase, all antidepressants can trigger a manic or hypomanic episode c. Mood stabilizers - Lithium <ul style="list-style-type: none"> i. Targeted behaviors - acute mania, the prophylaxis of bipolar illness, type I, cyclothymic disorder, and management of disruptive behaviors. ii. Nursing considerations – this population is prone to 				

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		<ul style="list-style-type: none"> developing toxic side effects to lithium, requiring close monitoring. d. Mood stabilizers - Valproic acid <ul style="list-style-type: none"> i. Targeted behaviors - patients with comorbid aggression, self injurious behavior and mood lability. ii. Nursing considerations - strict guidelines must be followed with regard to laboratory testing before and after treatment 2. Anxiety disorders <ul style="list-style-type: none"> a. Buspirone (BuSpar) <ul style="list-style-type: none"> i. Targeted behaviors – treatment of anxiety disorders, particularly generalized anxiety disorder also behavioral problems, including aggression and self injury ii. Nursing considerations – nothing specific, monitor for side effects. 3. Psychosis - Antipsychotic medications are frequently prescribed for psychotic symptoms or behavioral disturbances in people with developmental disabilities. <ul style="list-style-type: none"> a. Antipsychotics – typical 				

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		<p>(fluphenazine and thioridazine)</p> <ul style="list-style-type: none"> iii. Targeted behaviors – reducing stereotypical behaviors, aggressive and self injurious behaviors iv. Nursing considerations – increased frequency of extrapyramidal side (EPS) effects in people with developmental disabilities who are treated with typical antipsychotics. Another serious adverse effect of antipsychotics is neuroleptic malignant syndrome (NMS). <p>b. Antipsychotics – atypical (olanzapine, risperidone)</p> <ul style="list-style-type: none"> i. Targeted behaviors – self injurious behavior and aggression, repetitive behaviors. ii. Nursing considerations - Atypicals have a more tolerable side effect profile, but can promote weight gain, hyperglycemia, decreased seizure threshold and EPS <p>c. Antipsychotics – clozapine (Clozaril)</p> <ul style="list-style-type: none"> i. Targeted behaviors – 				

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		<p>treatment resistant mood and psychotic illnesses in people with developmental disabilities.</p> <p>ii. Nursing considerations – very constipating, high risk for impaction, causes weight gain, black box warnings for:</p> <ul style="list-style-type: none"> ◆ agranulocytosis – dangerously low WBC/ANC, must closely monitor CBC ◆ myocarditis – inflammation of myocardium <p>D. Other Disorders</p> <ol style="list-style-type: none"> 1. Pica – <ol style="list-style-type: none"> b. olanzapine (Zyprexa) <ol style="list-style-type: none"> i. Targeted behaviors – decrease the persistent eating of non-nutritive substances ii. Nursing considerations – medication is an antipsychotic with prominent dopaminergic, serotoninerigic, adrenergic, and cholinergic effects, monitor for side effects. 2. Mental Retardation – <ol style="list-style-type: none"> a. carbamazepine (Trileptal) <ol style="list-style-type: none"> i. Targeted behaviors – 				

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		<p>reducing self-injury and disruptive behavior</p> <ul style="list-style-type: none"> ii. Nursing considerations – anticonvulsant sometimes used for mood stabilization. Monitor for know side effects. Black box warning for Stevens-Johnson Syndrome (in adults only). <ul style="list-style-type: none"> b. benzodiazepines <ul style="list-style-type: none"> i. Targeted behaviors – commonly for anxiety and insomnia (and some medical conditions). ii. Nursing considerations – paradoxical reactions to benzodiazepines have been reported in individuals with MR (agitation, anger, depression, hostility, hyperactivity, irritability, socially inappropriate behavior). Not recommended for long term use (maximum of three weeks). Monitor for behavior changes. 				

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Medications used to modify behavior in the treatment of developmental disorders PHARM/ 0.5	Objective 3 Apply the nursing process to the administration of medications used to influence or modify behavior.	<p>A. Assess</p> <ol style="list-style-type: none"> 1. expected therapeutic effects 2. common adverse or side effects 3. toxic effects 4. client understanding <p>B. Diagnosis</p> <ol style="list-style-type: none"> 1. Knowledge deficit 2. Noncompliance 3. Misc. diagnosis relating to side effect noted i.e. <ol style="list-style-type: none"> a. Sleep Pattern, Disturbed b. Imbalanced Nutrition c. Risk for self-directed violence d. Constipation e. Anxiety f. _____ <p>C. Planning/Implementation</p> <p>D. Outcome identification/Evaluation</p>	<p><u>Lecture/Discussion</u></p> <ul style="list-style-type: none"> ▪ Have students discuss common side effects of identified medications. <p>Identify appropriate nursing diagnoses, interventions and outcomes for each side effect.</p>			
Medications used to modify behavior in the treatment of developmental disorders PHARM/ 0.5	Objective 4 Identify important concepts for patient/family education related to the administration of medication used to influence or modify behavior.	<p>A. Many of the medications used to modify behavior in individuals with developmental disabilities have not been approved by the FDA for use in children or for this purpose.</p> <ol style="list-style-type: none"> 1. Be as well informed as possible. <ol style="list-style-type: none"> a. Read the package insert to learn about expected therapeutic and side effects. b. Also talk to the doctor about what the target 				

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		<p>behaviors, what to expect and what to be alert for.</p> <p>2. Many of these meds have warnings that they can cause an increase in suicidal thoughts or behavior. Must monitor closely for changes such as:</p> <ol style="list-style-type: none"> acting more withdrawn feeling hopeless or worthless panic attacks new or worsening depression talking or thinking about hurting himself any unusual or sudden change in behavior <p>B. Communicate with the health care professional about any concerns regarding medications, symptoms and/or side effects.</p> <p>C. Do not give any OTC medications without discussing it with the doctor/health care professional.</p>				

Key:

For All Programs:									
A/P	Anatomy and Physiology	NP	Nursing Process	CCC	Culturally Congruent Care	M/S	Medical/Surgical Nursing		
		PE	Patient Education	EOL	End-of-Life Care	REH	Rehabilitation Nursing		
CDIS	Communicable Diseases	PHARM	Pharmacology	For VN Programs only:			For PT Programs only:		
COM	Communication	LDR	Leadership	FUN	Nursing Fundamentals	NS	Nursing Science Fundamentals		
NUT	Nutrition	SUP	Supervision	MAT	Maternity Nursing	MD	Mental Disorders		
PSY	Psychology	ETH	Ethics and Unethical Conduct	PED	Pediatric Nursing	DD	Dev. Disabilities		
G/D	Normal Growth and Development	CT	Critical Thinking	GER	Gerontological Nursing				

