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### PHAR 363.00: Pharmaceutical Care Lab I

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**Pharmacy 363**  
**Syllabus - Spring 2014**

**Meeting Times:** Tuesday or Thursday 1:10 to 3:00 or 3:10 to 5:00 in SB 229

**Lab Coordinator:** Lisa Venuti, PharmD SB 351 x4693  
Instructor: Kathy Brauer, BA Ed. CPhT

**Description:** This lab is designed to introduce the student to the technical and legal aspects of drug dispensing, prescription and OTC drug counseling, and sterile intravenous (IV) admixture in a simulated pharmacy environment.

**Course Goals:** At the end of this lab, students should have obtained the ability to:

- Fill prescriptions using commercial drug products in a simulated practice setting.
- Detect and properly handle prescription errors.
- Answer basic drug questions about the products dispensed.
- Properly utilize the NRx computer system.
- Explain need for proper execution of aseptic skills used in preparing sterile medications for parenteral administration.
- State the differences between parenteral dosage forms.
- Identify references required to safely compound parenteral dosage forms.
- Counsel patients on prescription and OTC drugs from selected classes of medications.
- Locate, gather and convey drug information with the use of reference books, computer programs, and personal digital assistants (PDAs).
- Recognize the 90 top prescription medications (trade name, generic name, and use)

**You will need:**

**1) Internet Access to Clinical Pharmacology** – Pass-codes provided to you at beginning of academic year. You must be signed up for this at the start of this class.

**2) A USB Flash Drive** clearly marked with your name and lab session: 1(T-1), 2 (T-3), 3 (Th-1) or 4 (Th-3). These will be used to store your video counseling sessions.

**3) A clean, white lab coat and name tag.**

**Laboratory Requirements and Operation:**

- Must attend all lab meetings. If unable to attend, please call **before** the lab session to make arrangements for a make-up lab.
- Wear a clean white lab coat with nametag.
- Dress appropriately. Shorts are only acceptable if they extend below your lab coat. NO hats of any kind.

- No eating in the lab. All drinks must be in a covered container and are to stay in the desk/table area of SB229. No beverages in IV room, counseling rooms, dispensing area, or next to the computers.
- IV room: no chewing gum, no open-toed shoes, remove all jewelry, tie long hair back.
- Clean your work area at the end of every session and return any books to the shelf.
- Phones should be OFF. Texting during class is entirely unprofessional.
- Conduct yourself in a professional manner.

**Grading Scale:** (You must receive at least a “C” in this course.)

A = 93-100% of possible points			
B = 86-92%	“	“	“
C = 79-85%	“	“	“
D = 72-78%	“	“	“
F = < 72%	“	“	“

**Points:**

Sterile Products Quiz	10	points
Counseling videos: 4 x 20 pts =	80	“
Prescriptions: 18 x 8 pts =	144	“
IV orders and worksheet: 2 x 10 pts =	20	“
Drug questions: 4 x 5 pts =	20	“
Drug Quizzes	165	“
Lab Practicum	100	“
Eating Cookies	1	“

**Total: 540 points**

***The course coordinator may adjust the grading scale and points assigned for any activity.***

**Class Attendance:** Mandatory - please call Lisa Venuti at 243-4693 if you must miss lab. All labs MUST be made up prior to the end of the semester.

**Academic Honesty:**

**All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at <http://www.umt.edu/SA/VPSA/index.cfm/page/1321>.**

**Students with disabilities:**

If you are a student with a disability who will require reasonable program modification in this course, please meet with Disability Services for Students in Lommasson 154 for assistance in developing a plan to address program modifications. If you are already working with Disability Services arrange to meet with me during my office hours to discuss reasonable modifications that may be necessary. For more information, visit the Disability Services website at <http://life.umt.edu/dss>.

**PHAR 363 SPRING 2014 SCHEDULE**

Month	Date	Agenda	Drug Quiz	Drug Quiz Points
Jan.	28 & 30	Orientation	-	
Feb.	4 & 6	Introduction to Sterile Products	-	
Feb.	11 & 13	Introduction to sterile compounding technique	-	
Feb.	18 & 20	Prescription Drug Counseling/ WWHAM	-	
Feb.	25 & 27	Reading the Rx and NRx training	-	
Mar.	4 & 6	1 <sup>st</sup> Dispensing Lab <b>(taping of counseling sessions begins)</b>	-	
Mar.	11 & 13	2 <sup>nd</sup> Dispensing Lab	-	
Mar.	18 & 20	3 <sup>rd</sup> Dispensing Lab – Drug Quiz #1	Rx medications # 1 – 15	15
Mar.	25 & 27	4 <sup>th</sup> Dispensing Lab – Drug Quiz #2	Rx medications #16 – 30 5 random meds from Quiz 1	20
Apr.	1 & 3	No labs – Spring Break		
Apr.	8 & 10	5 <sup>th</sup> Dispensing Lab – Drug Quiz #3	Rx medications #31-45 10 random meds from quiz 1 & 2	25
Apr.	15 & 17	6 <sup>th</sup> Dispensing Lab – Drug Quiz #4	Rx medications #46 – 60 15 random meds from quiz 1-3	30
Apr.	22 & 24	7 <sup>th</sup> Dispensing Lab – Drug Quiz #5	Rx medications #61 – 75 20 random meds from Quiz 1-4	35
Apr./May	29 & 1	8 <sup>th</sup> Dispensing Lab – Drug Quiz #6	Rx medications #76 – 90 25 random meds from Quiz 1 -5	40
May	6 & 8	Lab Practicum Final	-	

**Drug Quizzes**

Six quizzes will be given (schedule above) covering the 90 prescription drugs listed on the following pages. These represent, more or less, the top selling 90 prescription medications in 2012. For these quizzes, items will be missing from the table (brand name, generic name, or indication) and you will fill in the blanks with the appropriate answer. The quizzes will be given at the beginning of lab according to the above schedule.

**Top 90 Rx Medications by Prescriptions Dispensed (2012)**

GENERIC	BRAND®	USED FOR:
1. hydrocodone + APAP	Lortab, Vicodin	Pain (opioid analgesic)
2. lisinopril	Prinivil	Hypertension
3. Simvastatin	Zocor	Hypercholesterolemia
4. levothyroxine	Synthroid/Levoxyl	Hypothyroidism
5. amoxicillin	Amoxil	Bacterial Infections
6. azithromycin	Zithromax, Z-Pak	Bacterial Infections
7. hydrochlorothiazide (HCTZ)	Microzide*, Oretic*	Hypertension
8. amlodipine	Norvasc	Hypertension
9. alprazolam	Xanax	Anxiety
10. metformin	Glucophage	Diabetes
11. atorvastatin	Lipitor	Hypercholesterolemia
12. omeprazole	Prilosec	Heartburn, GERD
13. amoxicillin + clavulanate	Augmentin	Bacterial Infections
14. atenolol	Tenormin	Hypertension
15. furosemide	Lasix	Hypertension
16. metoprolol	Toprol XL, Lopressor	Hypertension
17. sertraline	Zoloft	Depression
18. zolpidem	Ambien	Insomnia
19. oxycodone + APAP	Percocet, Endocet	Pain (opioid analgesic)
20. esomeprazole	Nexium	Heartburn, GERD
21. clopidogrel	Plavix	Antiplatelet
22. montelukast	Singulair	Asthma/allergies
23. prednisone	Deltasone*	Immunosuppression
24. escitalopram	Lexapro	Depression
25. ibuprofen	Motrin, Advil	Pain/inflammation
26. citalopram	Celexa	Depression
27. albuterol	ProAir, Ventolin	Bronchodilator (asthma)
28. fluoxetine	Prozac	Depression
29. gabapentin	Neurontin	Seizure disorders
30. warfarin	Coumadin	Anticoagulant
31. tramadol	Ultram	Pain
32. clonazepam	Klonopin	Anxiety/insomnia
33. lorazepam	Ativan	Anxiety/insomnia
34. cephalexin	Keflex	Bacterial infections
35. cyclobenzaprine	Flexeril	Muscle spasms
36. sulfamethoxazole + trimethoprim	Septra, Bactrim	Bacterial infections
37. ciprofloxacin	Cipro	Bacterial infections
38. fluticasone	Flonase, Flovent	Asthma/allergies
39. triamterene + hydrochlorothiazide	Dyazide, Maxzide	Hypertension
40. pravastatin	Pravachol	Hypercholesterolemia
41. rosuvastatin	Crestor	Hypercholesterolemia
42. fluticasone + salmeterol	Advair	Asthma
43. trazodone	Deseryl*	Depression/insomnia
44. alendronate	Fosamax	Osteoporosis
45. fexofenadine	Allegra	Allergies

46. lovastatin	Mevacor	Hypercholesterolemia
47. carvedilol	Coreg	Hypertension
48. paroxetine	Paxil	Depression
49. meloxicam	Mobic	Pain/inflammation
50. diazepam	Valium	Anxiety
51. valsartan	Diovan	Hypertension
52. duloxetine	Cymbalta	Depression
53. venlafaxine	Effexor XR	Depression
54. ranitidine	Zantac	Histamine Blocker
55. fluconazole	Diflucan	Anti-fungal
56. naproxen	Naprosyn, Aleve	Pain/inflammation
57. doxycycline	Vibramycin*	Bacterial infections
58. potassium chloride	Klor-Con	Potassium replacement
59. amitriptyline	Elavil	Depression
60. lansoprazole	Prevacid	Heartburn, GERD
61. pioglitazone	Actos	Diabetes
62. methylprednisolone	Medrol	Anti-inflammatory
63. allopurinol	Aloprim*, Zyloprim	Gout
64. APAP + codeine	Tylenol w/codeine	Pain
65. enalapril	Vasotec	Hypertension
66. carisoprodol	Soma	Muscle spasms
67. tamsulosin	Flomax	Benign Prostate Hyperplasia
68. simvastatin + ezetimibe	Vytorin	Hypercholesterolemia
69. quetiapine	Seroquel	Schizophrenia, bipolar
70. levofloxacin	Levaquin	Bacterial Infections
71. fenofibrate	Tricor	Hypercholesterolemia
72. clonidine	Catapres	Hypertension
73. promethazine	Phenergan	Nausea
74. ethinyl estradiol+ drospirenone	Yaz	Birth Control
75. sildenafil	Viagra	Erectile dysfunction
76. celecoxib	Celebrex	Pain/inflammation
77. oxycodone	Oxycontin, Roxicodone	Pain (opioid analgesic)
78. insulin glargine	Lantus	Diabetes (Insulin replacement)
79. mometasone	Nasonex	Allergies, asthma
80. pregabalin	Lyrica	Neuropathic pain
81. glimepiride	Amaryl	Diabetes
82. temazepam	Restoril	Insomnia
83. folic acid	Folvite	Mineral Supplement
84. conjugated estrogens	Premarin	Menopausal symptoms
85. ezetimibe	Zetia	Hypercholesterolemia
86. spironolactone	Aldactone	Hypertension
87. digoxin	Digitek/Lanoxin	Arrhythmias
88. isosorbide mononitrate	Imdur	Angina
89. cefdinir	Omnicef	Bacterial Infections
90. ramipril	Altace	Hypertension

Abbreviations from table: HCTZ = hydrochlorothiazide, APAP = Acetaminophen (Tylenol®), GERD = Gastroesophageal reflux disease, COPD = Chronic obstructive pulmonary disease, ADHD = Attention deficit hyperactivity disorder

\* Denotes "old" brand names not too likely to be heard.

PHAR 363 Spring 2014 – Dispensing/Counseling/IV Schedule

Stud. #	1 <sup>st</sup> Lab 3/4, 3/6	2 <sup>nd</sup> Lab 3/11, 3/13	3 <sup>rd</sup> Lab 3/18, 3/20	4 <sup>th</sup> Lab 3/25, 3/27	Stud. #	5 <sup>th</sup> Lab 4/8, 4/10	6 <sup>th</sup> Lab 4/15, 4/17	7 <sup>th</sup> Lab 4/22, 4/24	8 <sup>th</sup> Lab 4/29, 5/1
<b>1 &amp; 2</b>	C - Room 221 1AI 2AH  Fill 2 (A)	IV (1)  Drug Quest. 1,2	Fill 2 (B)  C - Room 221 1An 2AD	Fill 4 (E)	<b>1 &amp; 5</b>	C - Rm 221 1AH 5AD  Fill 2 (C) 1- Refill	IV (2)  Drug Quest. 3, 4	Fill 2 (D) 5-Call-in  C - Rm 221 1AD 5AI	Fill 4 (F) 1- Call-in 5- Refill
<b>3 &amp; 4</b>	C - Room 223 3AI 4AH  Fill 2 (B)	Drug Quest. 3, 4  IV (1)	Fill 2 (A)  C - 223 3An 4AD	Fill 4 (F)	<b>2 &amp; 6</b>	C - Rm 223 2An 6AH  Fill 2 (D) 2- Call-in	Drug Quest. 3, 4  IV (2)	Fill 2 (C) 6- Refill  C - Rm 223 2AI 6An	Fill 4 (H) 2-Refill 6- Call-in
<b>5 &amp; 6</b>	IV (1)  Drug Quest. 1,2	Fill 2 (A)  C - Room 221 5AH 6AI	Fill 4 (E)	C - Room 221 5 An 6AD  Fill 2 (B)	<b>3 &amp; 7</b>	IV (2)  Drug Quest. 1,2	Fill 2 (C) 3- Refill  C - Rm 221 3AD 7AI	Fill 4 (E)  3-Call-in 7- Refill	C - Rm 221 3AH 7AD  Fill 2 (D) 7-Call-in
<b>7 &amp; 8</b>	Drug Quest. 3, 4  IV (1)	Fill 2 (B)  C - Room 223 7AH 8AI	Fill 4 (F)	C - Room 223 7 An 8AD  Fill 2 (A)	<b>4 &amp; 8</b>	Drug Quest. 1,2  IV (2)	Fill 2 (D) 4- Call-in  C - Rm 223 4An 8AH	Fill 4 (G) 4-Refill 8- Call-in	C - Rm 223 4AI 8An  Fill 2 (C) 8-Refill
<b>9 &amp; 10</b>	Fill 2 (C)  C - Room 221 9AH 10AI	Fill 4 (E)	C - Room 221 9AD 10An  Fill 2 (D)	IV (1)  Drug Quest. 1,2	<b>9 &amp; 13</b>	Fill 2 (A) 9- Refill  C - Rm 221 9An 13AH	Fill 4 (F) 9-Call-in 13- Refill	C - Rm 221 9AI 13An  Fill 2 (B) 13-Call-in	IV (2)  Drug Quest. 3, 4

<b>11 &amp; 12</b>	Fill 2 (D)  C – Room 223 11AH 12AI	Fill 4 (F)	C - Room 223 11AD 12An  Fill 2 (C)	Drug Quest. 3, 4  IV (1)	<b>10 &amp; 14</b>	Fill 2 (B) 10- Call-in  C – Rm 223 10D 14AI	Fill 4 (H) 10-Refill 14- Call-in	C - Rm 223 10AH 14AD  Fill 2 (A) 14-Refill	Drug Quest. 3, 4  IV (2)
<b>13 &amp; 14</b>	Fill 4 (E)	C - Room 221 13AI 14AH  Fill 2 (C)	IV (1)  Drug Quest. 1,2	Fill 2 (D)  C - Room 221 13AD 14An	<b>11 &amp; 15</b>	Fill 4 (E) 11-Call-in 15- Refill	C - Rm 221 11An 15AH  Fill 2 (A) 11- Refill	IV (2)  Drug Quest. 1,2	Fill 2 (B) 15-Call-in  C - Rm 221 11AI 15An
<b>15 &amp; 16</b>	Fill 4 (F)	C - Room 223 15AI 16AH  Fill 2 (D)	Drug Quest. 3, 4  IV (1)	Fill 2 (C)  C - 223 15AD 16An	<b>12 &amp; 16</b>	Fill 4 (G) 12-Refill 16- Call-in	C - Rm 223 12AD 16AI  Fill 2 (B) 12- Call-in	Drug Quest. 1,2  IV (2)	Fill 2 (A) 16-Refill  C – Rm 223 12AH 16AD

### Counseling:

**AI = Antiinfective** You will be counseling on one of the following drugs:

- 1) Azithromycin (Zithromax®) [URTI]
- 2) Cephalexin (Keflex®) [skin infection]
- 3) Levofloxacin (Levaquin®) [sinusitis]
- 4) Sulfamethoxazole/trimethoprim (Septra®, Bactrim®) [UTI]

**AN = Analgesic** You will be counseling one of four possible drugs:

- 1) Tramadol (Ultram®) [Moderate Pain]
- 2) APAP & hydrocodone (Lortab®) [Dental Pain]
- 3) Ibuprofen (Motrin®) [Rheumatoid arthritis]
- 4) Oxycodone/APAP (Percocet®) [Postoperative Pain]

**AH = Antihypertensive** You will be counseling on one of the following:

- 1) Atenolol (Tenormin®)
- 2) Hydrochlorothiazide (HydroDiuril®)
- 3) Lisinopril (Prinivil®)
- 4) Valsartan (Dionav®)

**AD = Antidepressant** You will be counseling on one of the following:

- 1) Bupropion (Wellbutrin XL®)
- 2) Duloxetine (Cymbalta®)
- 3) Sertraline (Zoloft®)
- 4) Venlafaxine (Effexor®)



## Dispensing Lab Schedule Key

Suppose you are student #1 and this is your schedule for the first 4 weeks:

1 <sup>st</sup> Rx Lab	2 <sup>nd</sup> Rx Lab	3 <sup>rd</sup> Rx Lab	4 <sup>th</sup> Rx Lab
C - Room 221 1AI 2AH  <b>Fill 2 (A)</b>	<b>IV (1)</b>  Drug Quest. 1,2	<b>Fill 2 (B)</b>  C - Room 221 1An 2AD	<b>Fill 4 (E)</b> 1 - Refill 2 - Call-in

### Week 1

**First ½ of Lab:** C = counseling. You are counseling in room 221. You will counsel on an anti-infective drug (AI) and your partner will counsel you on an antihypertensive (AH).

**Second ½ of lab:** You and your partner will fill the 2 prescriptions provided on sheet "A".

### Week 2

**First ½ of Lab:** You will work in the IV room with your partner and fill (compound) IV order #1.

**Second ½ of lab:** You and your partner will answer drug questions 1 & 2.

### Week 3

**First ½ of Lab:** You and your partner will fill the 2 prescriptions provided on sheet "B".

**Second ½ of lab:** You will counsel (in room 221) on an analgesic (An) and your partner will counsel you on an antidepressant (AD).

### Week 4

You and your partner will fill the 4 prescriptions provided on sheet "E". You will also fill a refill prescription, and your partner will fill a call-in prescription.