

## The Top 200 Drugs<sup>1,2,3</sup>(Part I)

You will encounter this list in various forms with various emphases throughout the year. As this is a pharmaceuticals course, we will be primarily concerned with available dosage forms. However, since a major emphasis in pharmacy is on drug-drug interactions (and to better prepare you for our next encounter in the spring) we will include obvious drug interactions. We will also consider drug-food interactions. In particular,

1. Indicate major trade names. In most cases these have been provided, but where there are significant trade names not indicated, include them
2. Indicate primary uses
  - a. If indication changes with dose, note the dose which corresponds to a particular use
3. Indicate basic mechanism of action. At this point, just the therapeutic class will suffice (e.g. Diltiazem is a calcium channel blocker)
4. Indicate the types of dosage forms available for the drug
  - a. Where oral solids are concerned, distinguish prompt from extended release formulations
  - b. Pay special attention to the counter ion used when the drug is formulated as a salt.
5. Indicate the available routes of administration
6. Frequency of administration
  - a. Differentiate dosing intervals for adults, children, and the elderly when appropriate
7. Special storage requirements
  - a. Refrigeration as an example
8. Major drug-drug interactions (if one exists)
  - a. Is the interaction a pharmacokinetic or pharmacodynamic interaction? That is, does it change the way the drug enters or exits the body (PK) or is it an additive effect with another medicine (PD)
  - b. Where is the site of interaction?
  - c. What are the symptoms and consequences of the interaction?

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<sup>1</sup> Based on number of US prescriptions dispensed in 2003

<sup>2</sup> As taken from RxList, <http://www.rxlist.com/top200.html>, data compiled by NDC Health, cited 08/18/04

<sup>3</sup> We will utilize the definition of drug put forward by Aulton on page xiii of the preface; namely, pharmaceuticals converts a drug into a medicine. As such, active drug entities which were initially listed as individual products have been summed, except where they occur as mixtures with other drugs.

9. Major drug-food interactions
  - a. Should the medicine be taken with food?
  - b. Should the medicine be taken without food?
  
10. Major drug-disease interactions
  - a. Are there any disease states that contraindicate the use of the drug?

Students should utilize their access to Clinical Pharmacology in order to find this information and maintain notes on each of the assigned drugs. There are certainly other fine sources available (US Pharmacopeia/National Formulary, Drug Facts and Comparisons, Mosby's Drug Consult, etc.), though if you choose to utilize additional resources make certain you cite the source of the information.

The good news:

We will split the top 200 drugs between Phars 531 and Phars 532, so you will be responsible for one hundred or so drugs this semester, give or take a few.

More good news: you don't need to be exhaustive at this point as you generate your journal (which will be checked periodically, perhaps for an extra point or 2). The quizzes will be structured so you can enter one of several options. As an example, a reasonable question would be indicate 2 routes of administration for Fentanyl.

Week 1 (August 23-27)

Non-Steroidal Anti-Inflammatory Drugs: COX Selective, COX Nonselective

Ibuprofen: 21<sup>4</sup>, 23.6<sup>5</sup> (Various<sup>6</sup>)

Celecoxib: 25, 21.8 (Celebrex)

Rofecoxib: 35, 18.9 (Vioxx)

Valdecoxib: 70, 9.9 (Bextra)

Naproxen: 76, 9.1 (Various)

Meloxicam: 152, 3.1 (Mobic)

Aspirin: ND<sup>7</sup>

Diclofenac: ND

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<sup>4</sup> Rank

<sup>5</sup> x 10<sup>6</sup> prescriptions

<sup>6</sup> Indicates data for 2 or more generics combined

<sup>7</sup> ND = not determined; i.e., > 191 in rank

## Week 2 (August 30-September 3)

### Opioid Analgesics

Hydrocodone/APAP<sup>8</sup>: 1, 85.1 (Various)

Propoxyphene/APAP: 22, 22.1 (Various)

Oxycodone/APAP: 38, 18.2 (Endocet, Roxicet, Percoset, & Mallinckrodt generic)

Codeine/APAP: 57, 13.6 (Various)

Oxycodone: 97, 7.0 (Oxycontin)

Tramadol/APAP: 122, 5.1 (Ultracet)

Fentanyl: 139, 3.9 (Duragesic)

Morphine: ND

Meperidine: ND

## Week 3

### Miscellaneous Pain Medications, Muscle Relaxants, and Upper Respiratory Combinations: Tricyclic-like, Unknown (Sedative?), Opioids with H<sub>1</sub> antagonists

Cyclobenzaprine: 66, 10.8 (Various)

Carisoprodol: 111, 5.7 (Various)

Metaxalone: 126, 5.0 (Skelaxin)

Hydrocodone/Chlorpheniramine: 151, 3.2 (Tussionex)

Promethazine/Codeine: 160, 2.9 (Alpharma generic)

Tramadol: 188, 2.2 (Teva generic)

Methocarbamol: ND

## Week 4

### Neurology: Anticonvulsives, Antimigrane: Threshold Modulators, Propagation Modulators, Serotonin Agonists, Sedative/Hypnotics

Gabapentin: 42, 16.9 (Neurontin)

Clonazepam: 44, 16.0 (Various)

Valproic Acid: 82, 8.3 (Divalproex)

Phenytoin: 93, 7.2 (Dilantin & Mylan generic)

Diazepam: 116, 5.4 (Mylan generic<sup>9</sup>)

Topiramate: 125, 5.0 (Topamax)

Sumatriptan: 135, 4.5 (Imitrex)

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<sup>8</sup> APAP = Acetyl-p-aminophenol or Acetaminophen

<sup>9</sup> With 4 brand products and 8 generic manufacturers, Diazepam may be a good example where the compiled list fails; i.e., if an individual supplier did not reach the top 200 ( $> 2.2 \times 10^6$  dispensed), it would not be counted. Drugs with many suppliers that compete effectively could add up and change the order of the list, particularly in the lower (rank 100-200) portion

Lamotrigine: 173, 2.5 (Lamictal)  
Oxcarbazepine: 177, 2.4 (Trileptal)  
Phenobarbital: ND

### Week 5

Antidepressants: SSRI's, Tricyclics, Aminoketones,  $\alpha_2$ -Antagonists

Sertraline: 14, 29.7 (Zoloft)  
Paroxetine: 16, 26.7 (Paxil, Paxil CR, & Par Generic)  
Fluoxetine: 39, 17.1 (Various)  
Venlafaxine: 41, 17.1 (Effexor XR)  
Citalopram: 45, 16.0 (Celexa)  
Bupropion: 47, 15.6 (Wellbutrin XR)  
Amitriptyline: 55, 13.7 (Various)  
Escitalopram: 58, 13.5 (Lexapro)  
Trazodone: 74, 9.3 (Various)  
Mirtazapine: 168, 2.7 (Remeron)

### Week 6

Antipsychotics/Antiemetics/Hypnotics: GABA Modulators, Phenothiazines, H<sub>1</sub>-Antagonists, Atypical Agents

Zolpidem: 26, 21.5 (Ambien)  
Risperidone: 83, 8.1 (Risperdal)  
Olanzapine: 91, 7.5 (Zyprexa)  
Quetiapine: 105, 6.1 (Seroquel)  
Promethazine: 123, 5.0 (Sandoz generic)  
Meclizine: 131, 4.7 (Par generic)  
Metoclopramide: 170, 2.7 (Pliva generic)  
Hydroxyzine: 171, 2.6 (Pliva generic)  
Zaleplon: ND

### Week 7

Antianxiety/Antimania/Stimulants/AntiParkinson's: Benzodiazepines,  $\beta$ -Phenylethylamines, Cholinesterase Inhibitors, NE Reuptake Inhibitors, Neurotransmitter replacement

Alprazolam: 13, 30.8 (Various)  
Lorazepam: 43, 16.0 (Various)  
Amphetamine/Dextroamphetamine: 80, 8.6 (Adderal XR & Barr generic)

Methylphenidate: 102, 6.8 (Concerta)  
Temazepam: 133, 4.5 (Mylan generic)  
Donepezil: 143, 3.8 (Aricept)  
Atomoxetine: 148, 3.4 (Strattera)  
Buspirone: ND  
Lithium Carbonate: ND  
L-Dopa/Carbidopa: ND

## Week 8

### Antibiotics I: $\beta$ -Lactams (Penicillins, Penicillin Derivatives and Cephalosporins), $\beta$ -Lactamase Inhibitors, Glycoprotein Antibiotics

Amoxicillin: 4, 57.9 (Various, Trimox, & Amoxil)  
Amoxicillin/Clavulanate: 28, 21.2 (Various, Augmentin ES-600, & Augmentin XR)  
Cephalexin: 30, 21.1 (Various)  
Penicillin VK: 71, 9.7 (Various)  
Cefdinir: 130, 4.7 (Omnicef)  
Cefprozil: 138, 4.0 (Cefzil)  
Cefuroxime: 175, 2.5 (Ranbaxy generic)  
Ceftriaxone: ND  
Vancomycin: ND  
Clindamycin: ND

## Week 9

### Antibiotics II: Macrolides, Fluoroquinolones, Folate Inhibitors, Nitrofurans, Tetracyclines

Azithromycin: 7, 39.5 (Zithromax)  
Ciprofloxacin: 54, 13.8 (Cipro, Ciloxan, & Barr generic)  
Levofloxacin: 60, 12.6 (Levaquin)  
Trimethoprim/Sulfamethoxazole: 65, 11.1 (Various)  
Clarithromycin: 81, 8.4 (Biaxin & Biaxin XL)  
Nitrofurantoin: 132, 4.6 (Macrobid)  
Doxycycline: 134, 4.5 (Watson generic)  
Moxifloxacin: 156, 3.0 (Avelox)  
Gatifloxacin: 189, 2.2 (Tequin)  
Tetracycline: 191, 2.2 (Ivax/Zenith generic)  
Erythromycin: ND

## Week 10

### Antiprotozoals/Antifungals/Antivirals: Imidazole Antifungals, Reverse Transcriptase Inhibitors, Sterol Biosynthesis Inhibitors, Polyene Antifungals

Fluconazole: 68, 10.7 (Diflucan)  
Valacyclovir: 109, 5.9 (Valtrex)  
Terbinafine: 174, 2.5 (Lamisil)  
Metronidazole: ND  
Acyclovir: ND  
Amphotericin B: ND

### Drugs for Diabetes I: Insulin Sensitizers (Thiazolidinediones), Sulfonylureas, Biguanides

Metformin: 24, 21.9 (Various + Glucophage XR)  
Glipizide: 67, 10.7 (Glucotrol XL)  
Pioglitazone: 73, 9.3 (Actos)  
Glyburide: 75, 9.2 (Various)

## Week 11

### Drugs for Diabetes I: Insulin Sensitizers (Thiazolidinediones), Sulfonylureas, Biguanides

Rosiglitazone: 79, 8.8 (Avandia)  
Glimepiride: 101, 6.9 (Amaryl)  
Glyburide/Metformin: 103, 6.7 (Glucovance)  
Octreotide: ND  
Glucagon: ND

### Drugs for Diabetes II: HRT

Human Insulin NPH: 118, 5.3 (Humulin N)  
Insulin Glargine: 119, 5.2 (Lantis)  
Insulin Lispro: 137, 4.1 (Humalog)  
Human Insulin 70/30: 142, 3.9 (Humulin 70/30)  
Regular Insulin: ND  
Insulin Aspart: ND  
Glucose

## Week 12

### Drugs for Endocrine Disorders, Metabolic Disorders, and Antiinflammatory Steroids: HRT (natural and synthetic), Xanthine Oxidase Inhibitors,

Levothyroxine: 2, 75.1<sup>10</sup> (Synthroid, Levoxyl & Levothyroid)

Prednisone: 37, 18.4 (Various)

Allopurinol: 136, 4.3 (Mylan generic)

Methylprednisolone: 150, 3.2 (Barr generic)

Levothyroxine/Liothyronine: 179, 2.4 (Armour Thyroid)

Prednisolone: 185, 2.3 (Orapred)

Somatropin: ND

Colchicine: ND

## Week 13

### Nutritional Supplements: Vitamins

Folic Acid: 129, 4.7 (Danbury generic)

Niacin: 147, 3.6 (Niaspan)

B<sub>6</sub>/B<sub>12</sub>/Folate: 190, 2.2 (Foltx)

### Laxatives

PEG 3350: 144, 3.7 (Miralax)

### Protein Drugs

Interferon  $\alpha$ : ND

Leuprolide: ND

Infliximab: ND

Trastuzumab: ND

Filgrastim: ND

Goserelin: ND

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<sup>10</sup> As the sum of Synthroid, Levoxyl, and Levothyroid prescriptions