Exploring the Top 20 Drugs!

Objectives
Upon completion of this session, the participant should be able to:
1. Identify some of the most commonly prescribed drugs in current practice
2. Recognize common pharmacotherapeutic agents recommended for select health problems
3. State at least one strategy to improve clinical practice as a result of heightened awareness of the most commonly prescribed drugs

Topical Outline
I. Men’s and Women’s Major Causes of Death
II. Most Commonly Prescribed Drugs in the U.S.
III. Correlates of Top Killers and Top Prescriptions
IV. Top Prescriptions and Drug Safety
V. Top Prescriptions and Revenue Generation

Leading Causes of Death – All Males
1. Heart Disease
2. Cancer
3. Unintentional Injuries
4. Stroke
5. Chronic lower respiratory disease
6. Diabetes
7. Influenza and pneumonia
8. Suicide
9. Kidney disease
10. Alzheimer’s Disease

Leading Causes of Death – All Females
1. Heart Disease
2. Cancer
3. Stroke
4. Chronic lower respiratory disease
5. Alzheimer’s Disease
6. Unintentional Injuries
7. Influenza and pneumonia
8. Kidney disease
9. Sepsis

Leading Causes of Death: What’s Common?
Major Causes of Death

#1 Heart Disease
#2 Cancer
#3 Chronic Lower Respiratory Disease
#4 CVA

What are the most commonly prescribed drugs in the U.S.?

Top 20 Most Prescribed Drugs in the U.S.

#20 Fluticasone/Salmeterol > 19.9 million prescriptions
#19 Warfarin > 22 million prescriptions
#18 Clopidogrel > 28.7 million prescriptions
#17 Montelukast > 28.8 million prescriptions
#16 Escitalopram > 29.9 million prescriptions

Top 20 Most Prescribed Drugs in the U.S.

#15 Atenolol > 38.6 million prescriptions
#14 Metoprolol > 40.5 million prescriptions
#13 Furosemide > 42.8 million prescriptions
#12 Alprazolam > 44.4 million prescriptions
#11 Omeprazole or Lansoprazole > 45.4 million prescriptions

Top 20 Most Prescribed Drugs in the U.S.

#10 Hydrochlorothiazide > 47.1 million prescriptions
#9 Amoxicillin > 49.2 million prescriptions
#8 Amlodipine > 50.9 million prescriptions
#7 Atorvastatin > 51 million prescriptions
#6 Metformin > 52 million prescriptions

Top 20 Most Prescribed Drugs in the U.S.

#5 Azithromycin > 53.8 million prescriptions
#4 Levothyroxine > 66 million prescriptions
#3 Lisinopril > 81.3 million prescriptions
#2 Simvastatin > 83 million prescriptions
#1 ?
### Top 20 Most Prescribed Drugs in the U.S.

**#1 Hydrocodone + Acetaminophen**
- 128.2 million prescriptions

### Most Commonly Prescribed Drugs in the U.S.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Drug</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hydrocodone + Acetaminophen (Lortab)</td>
</tr>
<tr>
<td>2</td>
<td>Simvastatin (Zocor)</td>
</tr>
<tr>
<td>3</td>
<td>Lisinopril (Prinivil)</td>
</tr>
<tr>
<td>4</td>
<td>Levothyroxine (Synthroid)</td>
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<tr>
<td>5</td>
<td>Azithromycin (Zithromax)</td>
</tr>
<tr>
<td>6</td>
<td>Metformin (Glucophage)</td>
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<tr>
<td>7</td>
<td>Atorvastatin (Lipitor)</td>
</tr>
<tr>
<td>8</td>
<td>Amlodipine (Norvasc)</td>
</tr>
<tr>
<td>9</td>
<td>Amoxicillin (Amoxicil)</td>
</tr>
<tr>
<td>10</td>
<td>Hydrochlorothiazide</td>
</tr>
<tr>
<td>11</td>
<td>Omeprazole (Prilosec)</td>
</tr>
<tr>
<td>12</td>
<td>Alprazolam (Xanax)</td>
</tr>
<tr>
<td>13</td>
<td>Furosemide (Lasix)</td>
</tr>
<tr>
<td>14</td>
<td>Metoprolol (Lopressor)</td>
</tr>
<tr>
<td>15</td>
<td>Atenolol (Tenormin)</td>
</tr>
<tr>
<td>16</td>
<td>Escitalopram (Lexapro)</td>
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<tr>
<td>17</td>
<td>Montelukast (Singular)</td>
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<tr>
<td>18</td>
<td>Clopidogrel (Plavix)</td>
</tr>
<tr>
<td>19</td>
<td>Warfarin (Coumadin)</td>
</tr>
<tr>
<td>20</td>
<td>Fluticasone/Salmeterol (Advair Diskus)</td>
</tr>
</tbody>
</table>

### Indications for the Most Commonly Prescribed Drugs

- **Cardiovascular**: Lisinopril, Simvastatin, Atorvastatin, Amlodipine, Clopidogrel, Hydrochlorothiazide, Atenolol, Metoprolol, Furosemide, Warfarin
- **Gastrointestinal**: Omeprazole
- **Central Nervous System**: Hydrocodone/APAP, Alprazolam, Escitalopram
- **Respiratory**: Montelukast, Salmeterol/Fluticasone
- **Endocrine**: Levothyroxine, Metformin
- **Anti-infectives**: Amoxicillin, Azithromycin

### How many of the 20 most commonly prescribed drugs target the leading 10 causes of death?

- Cardiovascular
- Gastrointestinal
- Central Nervous System
- Respiratory
- Endocrine
- Anti-infectives
Most Commonly Prescribed Drugs in the U.S.

#1 Hydrocodone + Acetaminophen
#2 Simvastatin* 
#3 Lisinopril* 
#4 Levothyroxine 
#5 Azithromycin* 
#6 Metformin* 
#7 Atorvastatin* 
#8 Amiodpine* 
#9 Amoxicillin* 
#10 Hydrochlorothiazide* 
#11 Omeprazole 
#12 Alprazolam 
#13 Furosemide* 
#14 Metoprolol 
#15 Atenolol 
#16 Escitalopram 
#17 Montelukast* 
#18 Clopidogrel* 
#19 Warfarin* 
#20 Fluticasone/Salmetero*

A Closer Look:
Top Killers and Top Prescriptions

#1 Killer of Men and Women:
Heart Disease

Men, Women, and Heart Disease

In the United States:
- Every 20 seconds, someone has an MI
- 1.5 million/year
- ~ 500,000 deaths
- Every 34 seconds, someone dies of heart disease
- Overall, more women than men die of heart disease each year
- For men < 65 years of age, 3 x more men than women die from heart disease

Lipid Levels

- When should cholesterol screening begin?
  - What indices should be initially tested?
- **Total Cholesterol**
  - Desirable: < 200 mg/dL
- **Triglycerides (VLDLs)**
  - < 150 mg/dL
- **HDL**
  - > 40 mg/dL
- **LDLs**
  - < 100 mg/dL: Optimal
  - [Consider values: < 130? < 100? < 70?]

Physiology Review: HMG-CoA Reductase

- **Cholesterol**: manufactured in the liver by a series of > 25 metabolic steps
- **HMG-CoA reductase** serves as the primary regulatory site for cholesterol biosynthesis
- Normally, this enzyme is controlled through negative feedback:
  - High levels of LDL will shut down production of HMG-CoA reductase, thus turning off the cholesterol pathway
- **Statins** act by inhibiting HMG-CoA reductase, which results in less cholesterol biosynthesis
- They increase the number of LDL receptors on hepatocytes causing a removal of LDLs from blood