Medication Safety

• 66% leave the physicians office with prescriptions
  – 3.4 billion prescriptions in 2005
  – 60% increase from 1995

• Medication Misuse
  – Annual cost of drug related illness and death
    $177 billion (2000)

• Importance of protecting yourself or playing an active role

Medication Safety

- Patients who understand instructions and take medications correctly…
  - Visit doctors less often
  - Fewer hospitalizations
  - Improved health outcomes
  - Increased patient satisfaction

True or False?

• If you are going to the physician’s office and need to fast for blood work, you should skip your medications that morning.

False
At Your Visit…

• Take your medications before going
• Go prepared
  – List of questions or problems
  – Bring ALL of your medications
  – Don’t forget your OTCs, vitamins, and herbals
• Bring list of medications that need to be refilled
  – 30 day and 90 day supplies (mail-order)
At Your Visit…

• In any week, 4 out of 5 people take a medication

• When a new medication is prescribed
  – 25% are not told the name of the medicine
  – 35% are told about side effects (only serious)
  – 33% are informed of how long the medicine will be used
  – 50% are given dose and directions

• Samples

True or False?

• Pharmacists are required by law to educate patients about their medications.

True
At the Pharmacy…

- Know Your Pharmacist!
- 35% of patients knew their pharmacists’ name
- More likely to…
  - Tell them all of your medicines
  - Read product labels
  - Know ingredients of the product
  - Ask health related questions

APhA www.pharmacist.org
At the Pharmacy...

• OBRA ‘90
  – Requires prescription education
  – Most people turn down the education or don’t realize they have the opportunity

• Ask Questions!

• Take time to listen to the pharmacist

• If you are not getting the help you deserve, go to a different pharmacy
At the Pharmacy

- Use only 1 pharmacy
- Provide them with a complete med list
- Call for refills before you run out
  - Set reminders on calendar
- Purpose, Proper Use, Potential Side Effects
- Ask about drug and food interactions
  - Over-the-counter meds, Grapefruit
- Protect against Look Alike-Sound Alike meds
At the Pharmacy

• Read ingredients in over-the-counter products
  – Same brand name but different ingredients or strengths

• Herbals
  – Not safer
  – Limited regulation on manufacturing
  – Limited information on safety
Medication Questions

• What is the medicine for?
• How long do I use it?
• When should I feel better?
• What side effects should I watch for?
  – What should I do if I experience these?
• When should I take it?
  – With or without food? Special administration?
• Can I drink alcohol while taking it?
• What if I forget a dose?
• What to do with current medications?
## Medication Lists

<table>
<thead>
<tr>
<th>Brand Name</th>
<th>Generic Name</th>
<th>Strength</th>
<th>When to take</th>
<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Morning</td>
<td>Afternoon</td>
</tr>
<tr>
<td>Flovent</td>
<td>Fluticasone</td>
<td>44 mcg inhaler</td>
<td>2 Puffs</td>
<td>2 Puffs</td>
</tr>
</tbody>
</table>
Know Your Medications

• **Brand vs. Generic**
  – Equally effective
  – Know both names or check with your pharmacist
  – Duplication risks

• **Know what your medications look like**
  – If it is different, check with the pharmacist

• **Check before you crush or split your tablets**
Know Your Medications

• Follow the directions
  – Don’t double doses, cut in half, or skip doses
  – Don’t give others your medications
  – Don’t take other people’s medications

• Antibiotics
  – Only effective for bacterial infections
  – Don’t push for antibiotics
  – Finish your antibiotics
  – Resistance is on the rise
Know Your Medicines

• Remember to take your medicines
  – Establish a routine
  – Use reminders on calendar, email, cell phone, etc.
  – Use pill boxes
• Tell your providers about side effects
• Discuss concerns
• Patient assistance programs
  – www.needymeds.com
Food-Medication Interactions

• Food & Beverage interactions can
  – Prevent med from working
  – Cause a new side effect
  – Cause a side effect to get better or worse

• Know if your meds should be taken
  – With food
  – After eating
  – On an empty stomach
  – Low fat meals

FDA. Avoid Food Drug Interactions. CDER 10-1933
Food-Medication Interactions

Avoid Alcohol
- Antihistamines
- Acetaminophen
- Narcotic pain meds
- Metronidazole*
- Benzodiazepines
- Antidepressants
- Antipsychotics
- Sleep aids

Separate from Food
- Digoxin
- Levothyroxine
- Fluoroquinolones
- Tetracycline, Minocycline, Doxycycline
- Antifungals
- Bisphosphonates

FDA. Avoid Food Drug Interactions. CDER 10-1933
Food-Medication Interactions

- Vitamin K foods and warfarin
- Tyramine foods
  - MAO-I (Phenelzine, tranylcypromine)
  - Linezolid
- Caffeine
  - Albuterol, Theophylline
  - Blood pressure or heart medications
- Potassium Foods and Salt Substitute
  - ACE-I, ARB
Food-Medication Interactions:
Grapefruit & Lime, Pomelo, Seville Oranges

- Amiodarone, Dronedrone
- Statins
- Apixaban, Cilostazol, Eplerenone, Rivaroxaban
- Benzodiazepines
- Budesonide rectal
- Calcium channel blockers
- Carbamazepine
- Clopidregrel (ineffective)
- Colchicine
- Dextromethrophan
- Erythromycin
- Urinary anticholinergics (fesoterodine, solifenacin)
- Losartan
- Lurasidone, Quetipine, Ziprasidone
- Oxycodone
- Pimozide
- Quinidine, Quinine
- Scopolamine
- Sildenafil, Vardenafil, Tadalafil
- Silodosin, Tamulosin

Not a complete List
True or False?

• You can store your medications in the medicine cabinet of your bathroom.

False
At Your Home…

- **Medication Storage**
  - Cool, dry location
  - Avoid the bathroom or kitchen near the stove
  - Keep away from children and pets

- **Consider locking up**
  - Prescription pain killers
  - Anxiety meds
  - ADHD meds
  - Prescription sleep aids
True or False

• Every household should have a bottle of ipecac available.

False
At Your Home…

Poison Prevention

- Keep all meds, chemicals, etc. out of reach
- Childproof vs. Child Resistant
- Never call medicine candy
- Keep in the original containers
- Keep Poison Control number handy
- Use Mr. Yuk stickers
- Review household plants
- Do not use Ipecac
Get a Yearly Medication Check-up

• Medication therapy management
• Review
  – Indications
  – Effectiveness
  – Drug Interactions including OTC, herbals
  – Side Effects
• Look for expired medications
Medications: Be Cautious

• Meet with your MD or pharmacist
• Look for meds that can increase risk for
  – Weakness
  – Fatigue
  – Fall risk
• Don’t stop any medications without discussing it first!
Medications: Be Cautious

- Non-selective alpha blockers
  - terazosin, doxazosin, etc
- Benzodiazepines
  - lorazepam, alprazolam, etc
- Muscle relaxers
  - carisoprodol, methocarbamol, etc
- Opioids
  - hydrocodone, codeine, oxycodone, etc
- Typical antipsychotics
  - promethazine, thioridazine, haloperidol, etc
True or False?

• When you find expired medications, flush them in the toilet.
  False
Expired Medications

• Do not continue using
  – Less effective
  – Increased side effects
    • Aspirin
  – Increased harm
    • Tetracycline
• May expire before expiration date
  – Insulin
  – Inhalers
Expired Medications

• Do not flush!
• Take out of the original container
• Mix with undesirable things
  – Kitty litter, coffee grounds, etc.
• Put in a sturdy container
  – Plain box, empty can, sealable bag
• Throw in trash just before removal
• Patches
Traveling

• Bring a med list
• Have your pharmacy and physician phone numbers
  – Medications can be transferred to another pharmacy
  – Vacation refill early if needed
• Keep in the original container
• Do not leave in your car
• Keep in a carry on bag
• Special note for some items with air travel
Preventative Medicine

• Vaccines
  – Influenza
  – Tdap
  – Pneumovax
  – Hepatitis A
  – Hepatitis B
  – Zostavax

• Screening
  – Pap/Pelvic
  – Mammograms
  – Prostate
  – Colonoscopy

• Calcium and Vitamin D
• Aspirin
• Statins
Estimating Daily Dietary Calcium Intake

2 cups milk/d x 300 mg = 600 mg
Occ. cups of yogurt/d x 300 mg = 0 mg
Occ. 1 oz cheese/d x 300 mg = 0 mg

Dairy Total 600 mg

Calcium from other foods + 200 mg

Dietary Total 800 mg
## Daily Calcium Requirements

<table>
<thead>
<tr>
<th>Age</th>
<th>Ca (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>500</td>
</tr>
<tr>
<td>4-8</td>
<td>800</td>
</tr>
<tr>
<td>9-18</td>
<td>1300</td>
</tr>
<tr>
<td><strong>19-50</strong></td>
<td><strong>1000</strong></td>
</tr>
<tr>
<td><strong>&gt;50</strong></td>
<td><strong>1200</strong></td>
</tr>
<tr>
<td>Pregnant &amp;≥18 years old</td>
<td>1000-1200</td>
</tr>
<tr>
<td>&lt;18 years old</td>
<td>1300</td>
</tr>
</tbody>
</table>
Don’t forget the Calcium!
# Calcium Supplements

<table>
<thead>
<tr>
<th>Form of Calcium (% elemental)</th>
<th>Strength</th>
<th>Elemental Calcium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium Carbonate (40%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generic Os-Cal</td>
<td>1250 mg</td>
<td>500 mg</td>
</tr>
<tr>
<td>Caltrate</td>
<td>1500 mg</td>
<td>600 mg</td>
</tr>
<tr>
<td>Viactiv Chews</td>
<td>1250 mg</td>
<td>500 mg</td>
</tr>
<tr>
<td>Tums (extra strength)</td>
<td>1250 mg</td>
<td>500 mg</td>
</tr>
<tr>
<td>Tums (regular strength)</td>
<td>500 mg</td>
<td>200 mg</td>
</tr>
<tr>
<td>Calcium Citrate (21%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Citracal</td>
<td>950 mg</td>
<td>200 mg</td>
</tr>
<tr>
<td>Calcium Gluconate (9%)</td>
<td>650 mg</td>
<td>58 mg</td>
</tr>
</tbody>
</table>
References

• Agency for Healthcare Research and Quality
  – www.ahrq.gov

• Federal Drug Association
  – www.fda.gov

• Institute for Safe Medicine Practices
  – www.ismp.org

• Consumer Med Safety
  – www.consumermedsafety.org

• US Pharmacopeia

• American Pharmacist Association
  – www.pharmacist.org
Questions?