America’s Medicine Cabinet

Proceed with (Pharmaceutical) Care

Supported through a grant from the Community Pharmacy Foundation
Acknowledgement

The presentation was developed for APhA by the Institute for Safe Medication Practices – Donna Horn, RPh, DPh

*Director, Patient Safety – Community Pharmacy Institute for Safe Medication Practices*

Presentation reviewers included Mitchel Rothholz, RPh, MBA; Harry Hagel, RPh, MS; Tara Wheatly, PharmD Candidate; Allen Vaida, RPh; and Louis Sesti, RPh.

The presentation was made possible through a grant from the Community Pharmacy Foundation.
What we will discuss...

- Significance of Medication Misuse
- Contributing Factors to Medication Misuse
  - Advertising
  - Patient behavior
  - Populations at risk
  - Importance of “reading the label”
    - Brand name extension
  - Health literacy
- Proper Medication Storage and Disposal
- Working with Your Pharmacist
Medication Use Trends

Importance of medication and being an informed consumer
Unintentional medication misuse can lead to patient harm and additional health care costs.
What’s causing misuse of medicines?

- People take a lot of (legal) drugs
  - Lots of prescriptions written
  - Lots of new prescription, OTC, and “natural” meds and vitamins available
  - TV ads
  - OTC labels hard to read
  - Seniors, parents get confused
  - Written information is hard to read
2006 Institute of Medicine Report

- 4 of 5 US adults take Rx, OTC, or dietary supplement every week
- 33% take 5 or more medications weekly
- 1.5 million injured by medication errors
- Medication errors cost $3.5 billion
Scope of the Problem

- Two of three patients leave doctor’s office with a prescription
- 3.4 billion prescriptions filled in 2005
- 40% of the US population receive four or more prescriptions every year

Pressure to Receive a Prescription…
Experience with Antibiotics

- 23 million antibiotic prescriptions written for
  - Colds
  - Bronchitis
  - Upper respiratory infections
- 44% children given antibiotics for colds
- 51% adults given antibiotics for colds
- CDC 70% bacteria causing infection are resistant to at least one common drug

And More Drugs are Coming...

- 25 to 35 new drug approvals possible in each of the next 3 years
- 350 new biotech drugs being tested for market right now


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106 million people use vitamins and minerals daily

44.6 million people use herbal remedies*

24.2 million people use specialty supplements

*11.9 million people experienced a side effect or an adverse reaction from using herbal remedies. (one-fourth of the 44 million people using such products)

Natural ≠ Safe

- **Blood thinners:**
  - Coumadin (Rx)
  - Aspirin (OTC)
  - Ginkgo biloba (herbal)
  - Vitamin E (dietary supplement)

- **St. John’s wort decrease effectiveness of:**
  - HIV drugs
  - Birth control drugs
  - Drugs for heart, cancer, depression, seizures
Impact of Direct-to-Consumer (DTC) Advertising

- Claims linked to happy, smiling actors may result in irrational demands for new drugs
- May lead to overmedicating

Consumer Reports Survey

- 78% of primary care physicians were asked by their patients for specific drugs advertised on TV
  - 67% of doctors granted their patients' request

Source: Get better care from your doctor: what 39,090 patients and 335 doctors have to say about how to make the most of your next appointment. Consumer Rep 2007;72:32–36.
**Prescription and OTC Medicines**

How are they different? How are they the same?

**Prescription**
1. Ordered by a doctor
2. Bought at a pharmacy
3. Ordered for and used by only one person

**Both types of medicine:**
- Directions must be followed carefully and correctly
- Children should use only with permission of a parent or guardian
- A pharmacist can answer questions

**OTC**
1. Can buy without a doctor’s order
2. Bought off the shelf in store aisles
3. May be used by more than one person for the same symptom or problem
Medication Use Issues

Factors impacting appropriate medication use and outcomes...
Common Causes of "Medication Misuse"

- Taking incorrect doses
- Taking doses at wrong times
- Forgetting to take doses
- Stopping medicine too soon
Misuse Leads to Treatment Failure

- Missed doses of glaucoma medicine can lead to optic nerve damage and blindness.

- Missing doses or suddenly stopping high blood pressure medicine can cause a rebound rise in blood pressure.
Emergency Room Visits

- 700,000 patients treated each year because of unintentional overdoses.
- Five most common types of drugs taken incorrectly:
  - Insulin
  - Blood thinners
  - Antibiotics
  - Aspirin
  - Pain medications

Americans with Increased Risk of Medication Misuse:

- Are depressed
- Are going through a life change
- Frequently drink alcohol
- Live alone and don't get out much
- Suffer from pain
- Have language or hearing difficulty or feel uncomfortable asking questions

Seniors at Risk

- Elderly (65+) are 13% of US population
- Account for 34% of all prescriptions dispensed
- Average number of prescriptions per elderly person was 28.5 in 2000
- Estimated to reach 38.5 by 2010
- 243,000 hospitalized/year from reactions between prescriptions and OTC drugs

Seniors at Risk

Barriers

- Visual, hearing, and cognitive impairment
- Slower organ functions, more body fat (drugs in body longer, increase chance of side effects)
- Labeling and packaging difficult to read or use
- Lack of health insurance and cost of drugs

Example: Elderly Overuse

- Unnecessary use of antihistamines, anti-anxiety, sleep aids, and minor tranquillizers
  - Leads to avoidable injuries
    - Falls
    - Fractures
    - Motor vehicle accidents
  - $27.3 billion health care expenses related to falls in 2005


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Medications at School

- 6% children (13 million) receive medication in school
  - 80% medication errors were “missed doses” (forgotten)
  - Bad habits, poor disease management, rapid disease advancement

Over-the-Counter (OTC) Medications

What you should know before you buy...
Over-the-Counter Medications Concerns with Usage

- One of six adults admit taking three or more pills in single dose, despite label recommendations
- 47% children given wrong dose of OTC fever medicine
- OTC labels Drug Facts hard to understand

Concentrated Liquid Tylenol for Infants

- A parent almost gave her 27-month-old child 2 teaspoonsful of Tylenol® infant drops (acetaminophen) instead of 2 droppersful.

- She did not realize that the infant drops are much more concentrated than the children's elixir.
Drug Facts

Concentrated TYLENOL Infants’ Drops

CONTAINS Acetaminophen
Fever Reducer Pain Reliever

Pediatricians’ First Choice

Use ONLY enclosed dropper

Cherry

Dosing Chart

<table>
<thead>
<tr>
<th>Weight (lb)</th>
<th>Age (yr)</th>
<th>Dose (mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>under 24</td>
<td>under 2</td>
<td>ask a doctor</td>
</tr>
<tr>
<td>24-35</td>
<td>2-3</td>
<td>1.6 mL (0.8 + 0.8 mL)</td>
</tr>
</tbody>
</table>

Attention: Specifically designed for use with enclosed dropper. Do not use any other dosing device.

Other information
- do not use if plastic carton wrap or bottle wrap imprinted “Safety Seal®” is broken or missing
- store between 20-25°C (68-77°F)
- see bottom panel of carton for expiration date and lot number

Inactive ingredients
- cellulose, citric acid, corn syrup, FD&C Red #40, flavors, glycerin, purified water, sodium benzoate, sorbitol, xanthan gum

Questions or comments?
call toll-free 1-877-895-3665 (English) or 1-888-466-8746 (Spanish)

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Measuring Tools for Medicines

- Use the measuring spoon, cup, or syringe that comes with your medicine. This is the most exact way to measure your dose.
- If your medicine doesn’t come with a special measuring tool, ask for one at the pharmacy.
- A silverware spoon may hold the wrong amount of medicine.
- Make sure the tool can measure the right dose—check the markings on the tool.
Did you know?

TYLENOL® and Nyquil® contain the same active pain relief medicine.

Did you know?
The popular prescription medications Percocet and Vicodin also contain acetaminophen.
Confusion in the OTC Aisle

- Brand name extension products
  - 50 different Tylenol® products
    - Extra strength
    - Arthritis strength
    - PM
    - Various cold and flu preparations
  - Look closely at ingredients or overdose can occur

Brand Name Extensions

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Kaopectate®
Anti-Diarrheal
Bismuth Subsalicylate

Effective
Diarrhea Relief
Restores
Natural Balance
Easy to Swallow

12 Caplets
262 mg bismuth subsalicylate per caplet

Kaopectate®
Stool Softener
Docosate Calcium

Gentle Relief of
Constipation
Sodium Free
Once-a-Day Dosage

30 LIQUI-GELS® SOFTGELS
240 mg docosate calcium per softgel

Not For Diarrhea
# Drug Facts

<table>
<thead>
<tr>
<th>Active ingredient(s)</th>
<th>Purpose</th>
</tr>
</thead>
</table>

## Uses
- 
- 

## Warnings
- Do not use ........
- Ask a doctor before use if you have
  - 
- Ask a doctor or pharmacist before use if you are
  - 
- When using this product
  - 
- Stop use and ask a doctor if
  - 
- If pregnant or breastfeeding, **Keep out of reach of children.** In case of accidental ingestion, get medical help or contact a Poison Control Center immediately.

## Directions
- 
- 
- 

## Other information
- 

## Inactive ingredients

## Questions?
## Drug Facts

<table>
<thead>
<tr>
<th>Active ingredient (in each tablet)</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorpheniramine maleate 2 mg</td>
<td>Antihistamine</td>
</tr>
</tbody>
</table>

### Uses
Temporarily relieves these symptoms due to hay fever or other upper respiratory allergies:
- sneezing
- runny nose
- itchy, watery eyes
- itchy throat

### Warnings
Ask a doctor before use if you have:
- glaucoma
- a breathing problem such as emphysema or chronic bronchitis
- trouble urinating due to an enlarged prostate gland

Ask a doctor or pharmacist before use if you are taking tranquilizers or sedatives:
- you may get drowsy
- avoid alcoholic drinks
- alcohol, sedatives, and tranquilizers may increase drowsiness
- be careful when driving a motor vehicle or operating machinery
- excitability may occur, especially in children

If pregnant or breast-feeding, ask a health professional before use.
Keep out of reach of children. In case of overdose, get medical help or contact a Poison Control Center right away.
Drug Facts

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**Directions**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>adults and children 12 years and over</td>
<td>take 2 tablets every 4 to 6 hours not more than 12 tablets</td>
</tr>
<tr>
<td>children 6 years to under 12 years</td>
<td>take 1 tablet every 4 to 6 hours not more than 6 tablets</td>
</tr>
<tr>
<td>children under 6 years</td>
<td>ask a doctor</td>
</tr>
</tbody>
</table>

**Other information**

store at 20-25°C (68-77°F) ■ protect from excess moisture

**Inactive ingredients**
D&C yellow no. 10, lactose, magnesium stearate, cellulose, pregelatinized starch
Inactive Ingredients

An inactive ingredient is a chemical compound in the medicine that has no effect on your body. Preservatives, items that bind the pill together and food colors are listed here.
Ask a doctor or pharmacist before use if you are taking tranquilizers or sedatives.

When using this product
- you may get drowsy
- avoid alcoholic drinks
- alcohol, sedatives, and tranquilizers may increase drowsiness
- be careful when driving a motor vehicle or operating machinery
- excitability may occur, especially in children

If pregnant or breast-feeding, ask a health professional before use.
Keep out of reach of children. In case of overdose, get medical help or contact Center right away.

**Directions**

<table>
<thead>
<tr>
<th></th>
<th>adults and children 12 years and over</th>
<th>take 2 tablets every 4 hours, not more than 12 tablets in 24 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>children 6 years to under 12 years</td>
<td>take 1 tablet every 4 hours, not more than 6 tablets in 24 hours</td>
</tr>
<tr>
<td></td>
<td>children under 6 years</td>
<td>ask a doctor</td>
</tr>
</tbody>
</table>

**Other Information**

- store at 20-25°C (68-77°F)
- protect from excess moisture

**Inactive ingredients**
- D&C yellow no. 10, lactose, magnesium stearate, colloids, pregelatinized starch

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Other Information

Any other important information about the product, such as how to store the medicine, will be listed in this section.
What Does this Medicine Treat?

**Drug Facts**

Active ingredients

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Ibuprofen 100 mg (NSAID)*</th>
<th>Pseudoephedrine HCL 15mg</th>
<th>Nasal decongestant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain reliever/fever reducer</td>
<td></td>
<td>Nasal decongestant *nonsteroidal anti-inflammatory drug</td>
<td></td>
</tr>
</tbody>
</table>

Uses temporarily relieves:
- Nasal and sinus congestion
- Stuffy nose
- Headache
- Minor body aches and pains
- Fever

Warnings:

Allergy alert: Ibuprofen may cause a severe allergic reaction, especially in people allergic to aspirin. Symptoms may include:
- Hives
- Facial swelling
- Asthma (wheezing)
- Shock
- Skin reddening
- Rash
- Blisters

Sore throat warning: Severe or persistent sore throat accompanied by high fever, headache, nausea, and vomiting may be serious. Consult doctor promptly. Do not use more than 2 days or administer to children under 3 years of age unless directed by a doctor.

Relieves: Grape Flavor
Fever,
Sore Throat
Stuffy Nose

Children’s Feel Better Cold and Fever Suspension
This Medicine Treats:

- Fever
- Headache
- Minor body aches and pains
- Sore throat
- Stuffy nose
- Nasal and sinus congestion

Drug Facts

Active ingredients | Purposes
--- | ---
Ibuprofen 100 mg (NSAID) | Pain reliever; fever reducer
Pseudoephedrine HCl 15mg | Nasal decongestant
*nonsteroidal anti-inflammatory drug

Uses

- temporarily relieves
  - nasal and sinus congestion
  - stuffy nose
  - sore throat
  - minor body aches and pains
  - fever
Let’s Review

The new *Drug Facts* label appears on:

a) most prescription medicines.

b) most OTC medicines.

c) dietary and herbal supplements.
What if you currently use an OTC medicine for a cough?

Before you buy headache medication, which section of the *Drug Facts* label should you read and compare?

a) Inactive ingredients
b) Active ingredients
c) Warnings
More Review

What kind of information will you find in the *Warning* category on the new *Drug Facts* label?

a) When to ask a doctor or pharmacist before using
b) Possible side effects
c) Directions for pregnant or breast-feeding mothers
d) All of the above
Safe Medication Use

Understanding and taking charge...
What is Health Literacy?

- Health literacy is the ability to read, understand, and effectively use basic medical instructions and information.
- Low health literacy can affect anyone of any age, ethnicity, background, or education level.
Health information can be confusing at times

Everyone wants help with health information

Asking questions helps patients understand how to prevent or manage illness
Link: Low Health Literacy and Medication Misuse

A recent study shows that of people with reading difficulty:

- 36% took more or less than prescribed dosage.
- 28% completely omitted one or more prescribed medications.
- 12% took an extra dose.
- 8% used an unauthorized drug.
- 7% took medication at wrong time.

Source: www.usp.org/pdf/EN/patient safety (accessed 8/06)
Patients who understand health care information may:

- understand instructions and take medications correctly.
- visit doctors less often.
- have fewer hospitalizations.
- have better health outcomes.
- have increased patient satisfaction (feel better!).


Check-up

Prescription Pick-up

- Is this your medicine?
- State your address and date of birth; do you match the information on the prescription receipt?
- Do pharmacy employees open the bag and compare the name on the receipt with the name on the prescription label?
- Do pharmacy employees offer you the opportunity to talk to the pharmacist?
  - Know what you are signing.
What to Do…

AT HOME

- Keep medications in original containers
- Never take someone else’s medication
- Read the label every time you take a dose
- Keep a current list of your medications
- List your allergies (food, herbal, drugs)
- Place medication in a safe location

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Lock Up Your Medicines

- Prescription pain killers
- Anti-anxiety medications
- Medications for sleep
- You play a big role in keeping these powerful medicines out of the hands of those who shouldn’t have them
Disposal of Unused/Expired Meds

- Take medication as directed, including length of time.
- Discard when too old or no longer needed
  - See expiration date, beyond use date, or “EXP” on Rx label or OTC package.
- Do not flush unused medications.
  - UNLESS insert specifically says it is OK.
- Check with your local government.
  - Household hazardous waste facilities.
  - Ask your pharmacist about take-back locations that allow the public to bring unused drugs to a central location for safe disposal.

Source: SMARxt Disposal Campaign

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Proper Disposal

- **Do not flush** unused medications
- Be proactive and dispose of unused medication yourself in household trash.
  - For pills, pour into plastic bag before crushing or dissolve in water to prevent airborne particles.
  - Crush medication.
  - For liquid medications, pour into a plastic bag.
  - Mix kitty litter or coffee grounds in the plastic bag containing the medication.
  - Seal the plastic bag to reduce the risk of potential poisoning.
  - Place sealed plastic bag in household trash for disposal.
  - Remove and destroy ALL identifying personal information (prescription label) from the medication container.
  - Recycle empty medication container as allowed in the local recycling area or throw it in the trash.

Source: SMARxT Disposal Campaign.
Your Pharmacist

How to engage and work with your pharmacist...
The Solution to Ensuring Safe Medication Use

- Pharmacists are the key health care professionals to talk with regarding medication use issues
  - Patients trust and respect them
  - They know what medications are being taken and how to identify problems

- Community pharmacists
  - Available in locations close to you
  - They dispense medications
  - They provide patient education, counseling, and monitoring of drug therapy
Pharmacists have the skills to:

- help you select the appropriate medication,
- work with your physician and other health care team members on your medication treatment plan,
- eliminate medication duplication,
- screen for drug-drug interactions, and
- tailor your medication regimen to your individual needs.
Community pharmacies offer:

- Preventive services
  - Blood pressure screenings
  - Bone density screenings
  - Pulmonary function testing
  - Cholesterol testing
  - Diabetes education
  - Immunizations
And more…

- Professional services
  - Education on new and refill medication
  - Assistance and advice on selection of OTC and herbal products
  - Take-home patient literature on prescribed medications
  - Compliance/persistency reminder programs
  - Health condition information

- Coordinate care with your other health care providers
Why Talk with Your Pharmacist?

- When taken correctly:
  - for every $1 spent on Rx medication, there is $4 decrease in hospital costs.
  - for every $3 spent on asthma medication,
  - there is a $17 decrease in emergency room spending.

Source: NACDS Practice Memo. *It’s time to talk about value.*
Solutions?

- Know your medicine…
- know your pharmacist

- Written information should include:
  - name of medication.
  - purpose for taking it.
  - how long to take it.
  - possible adverse effects.
  - how much and how often.

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Pharmacists
improving medication use...advancing patient care

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