



Prudent Disposal of Unused Medications: Public Policy and Legislation

Society for Human Ecology
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Disclaimer



This presentation is based on the views and opinions of the author and does not necessarily reflect EPA policy.



...to protect human health and the environment



Outline

- Pharmaceuticals in the environment, a growing issue
- What EPA is doing
- What are some states and countries doing to address disposal of unused medications

What are PPCPs?

- Prescription and over-the counter therapeutic drugs
- Veterinary drugs
- Fragrances
- Cosmetics
- Sun-screen products
- Diagnostic agents
- Nutraceuticals (e.g., vitamins)

What are the Major Sources of PPCPs?

- Human activity (e.g., bathing, shaving, swimming)
- Veterinary drug use, especially antibiotics and steroids
- Agribusiness Residues from pharmaceutical manufacturing (well defined and controlled)
- Residues from hospitals

People contribute PPCPs to the environment when:

- Medication residues pass out of the body and into sewer lines,
- Externally-applied drugs and personal care products they use wash down the shower drain, and
- Unused or expired medications are placed in the trash.

What does EPA do?

- **Protect Human Health**
 - Drinking water
 - Sources of drinking water
- **Protect the Environment**
 - Aquatic life, wildlife
 - Ensure fish-able and swim-able waters
 - Regulate discharges into the environment



Legislation governing Pharmaceuticals and PCPs

- EPA-- SDWA, CWA, RCRA
- DEA --Controlled Substance Act
- FDA – Drug Approval
- HHS – Medicare Part D
- DOT – transporting waste

Headlines March 10th-14th

USA Today --**Little Done to Test, Limit Contaminated Water**



Portland, Maine Press Herald --**Disposing of Drugs: Help is on the Way**

Bangor, Maine Daily News--**On a Mission for Safe Water**

St. Louis, Missouri Post-Dispatch--**Group Studies Safer Way to Get Rid of Drugs**

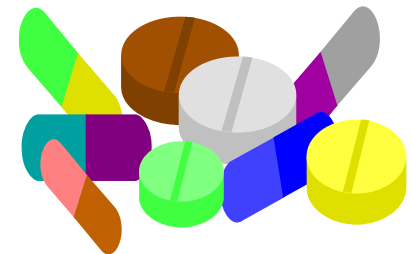
Charleston, West Virginia Gazette--**Drugs Found in Nation's Drinking Water Supply**

Prescription Drugs Found in Tap Water



Interactions with Environmental Agents: Polypharmacy

- The body uses the same biological processes to “clear” medications as it does environmental toxicants.
 - Many older persons take multiple Rx's.
 - Increased risk of adverse reactions may be due to interactions between medications and concurrent environmental exposures.



Medicare

- In 2004, RXs accounted for 15% of all health care costs, more than nursing home and institutional long term care costs (14%).
- Rx drugs increased in importance for health care expenditures from 8% in 1992 compared to 15% in 2004.

Indicator 30 – Health Care Expenditures

Major components of health care costs among Medicare enrollees age 65 and over, 1992 and 2004



Note: Data include both out-of-pocket costs and costs covered by insurance. "Other" includes short-term institutions, hospice services, and dental care.

Reference population: These data refer to Medicare enrollees.

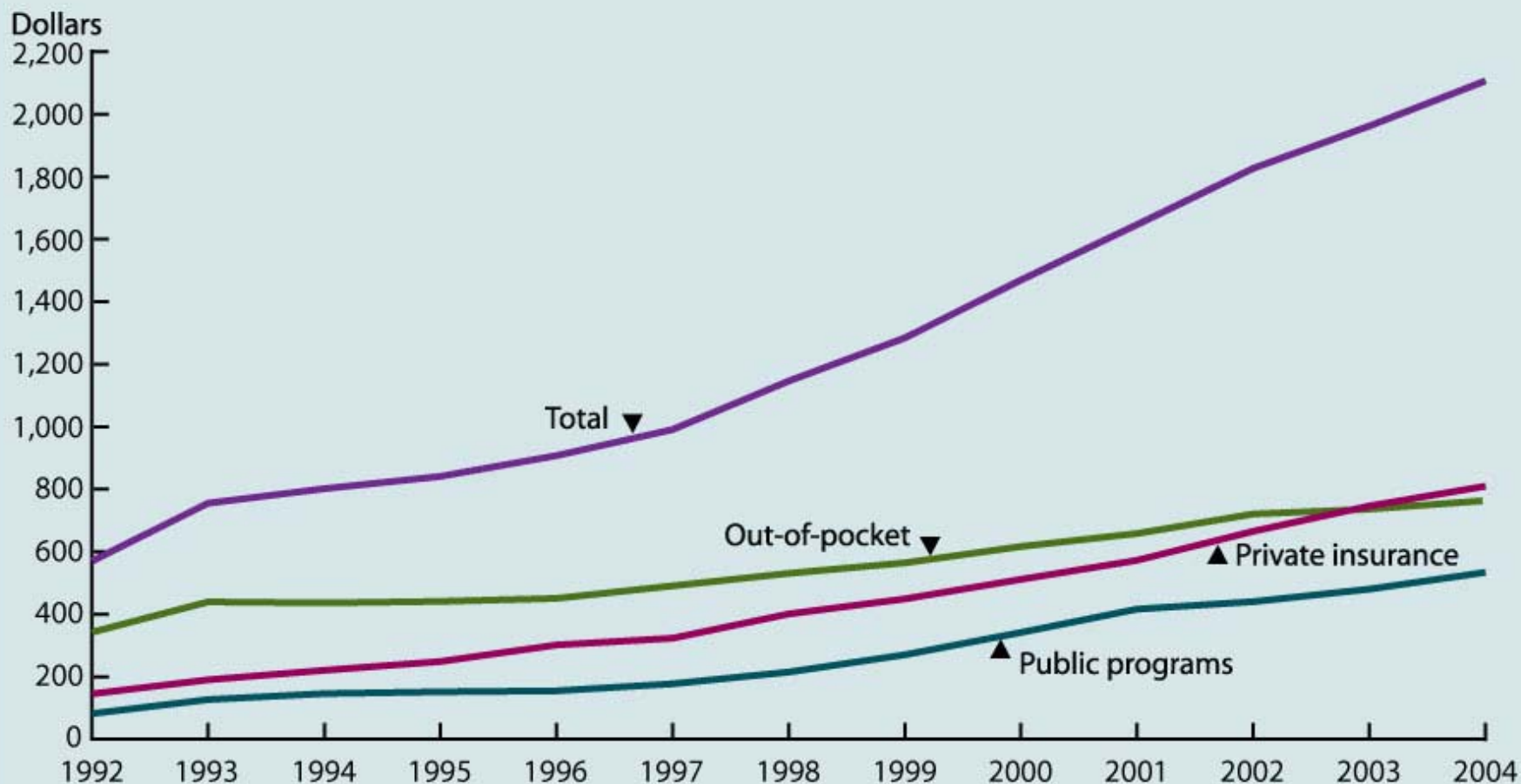
Source: Centers for Medicare and Medicaid Services, Medicare Current Beneficiary Survey.

Rx Drug Costs

- Average Rx drugs costs for older Americans have rapidly increased in recent years. The average cost per person was \$2,107 in 2004.
- Chronic conditions are associated with high Rx drug costs. Those without a chronic condition paid on average \$800 for Rxs compared to \$3,862 for persons with 5 or more chronic conditions.

Prescription Drugs

Average annual prescription drug costs and sources of payment among noninstitutionalized Medicare enrollees age 65 and over, 1992–2004



Note: Dollars have been inflation adjusted to 2004 using the Consumer Price Index (Series CPI-U-RS). Reported costs have been adjusted by a factor of 1.205 to account for underreporting of prescription drug use. Public programs include Medicare, Medicaid, Department of Veterans Affairs, and other State and Federal programs.

Reference population: These data refer to Medicare enrollees.

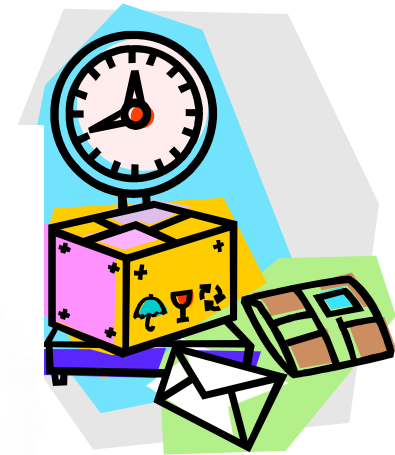
Source: Centers for Medicare and Medicaid Services, Medicare Current Beneficiary Survey.

US EPA Pilot Projects

- Pilot projects will be able to determine why medications are not used and how many pills and personal care products are disposed of.
- Findings will be shared with other federal agencies that have a role in pharmaceutical distribution and disposal.

Filling Research Gaps

- Quantify by weight, type and hazardous characteristics during the pilot by actual pill count and classification.



University of Maine Center on Aging

This project plans to devise, implement and evaluate a mail-back plan to remove unused and unwanted medications from residences and dispose of them in compliance with state and federal laws and sound environmental practices.

Area Resources Community and Human Services (ARCHS)

- **Identify 25 regional supermarkets that will serve as collection centers**
- **Establish an environmentally friendly method to dispose of the unused medications**
- **Plan regional presentations about proper drug disposal to older adults and school students**

Legislation on Pharmaceutical Disposal

- United States
 - Maine (2003)
 - California (2007)
- Australia (1998)
- European Union
- Provinces in Canada

Maine:Unused Pharmaceutical Disposal Program 2003

- First in the nation legislation.
- To ensure the safe, effective and proper disposal of unused pharmaceuticals.
- Mail back program.

SB 966 Reducing Pharmaceuticals in Waste Stream 2007

- Model pilots to begin process of a statewide program for disposal of unused medications.
- Requires CA Integrated Waste Management Board to develop model programs for the collection and proper disposal of pharmaceutical waste.
- Model programs must be available no later than December 31, 2008.

Australia's Return Unwanted Medicines (RUM) Project

- Began July 1998.
- A permanent, national, government-financed program that provides for unwanted and expired medicines to be collected by community pharmacies.

Return Unwanted Medicines (RUM):

The solution to Medicine Waste

Why your medicine cabinet can be a health hazard

Most of the medicines in our medicine cabinet we need, but what about the yellow pills in a jar that's lost its label, and the eye drops with the crystals growing around its seal? And what was so wrong that we were prescribed Quivnox B-Sulphamate?

Old medicines lying around the home 'just in case' are dangerous...

- ✓ If taken when they're out-of-date
- ✓ If taken when not prescribed for you
- ✓ If in reach of little prying fingers

In an average week, around 50 Aussie kids are admitted to hospital after swallowing medicines not intended for them.

The RUM Project provides the safest and easiest way to dispose of unwanted and out-of-date medicines.

It makes possible the return of all household medicines to any pharmacy at anytime - for free and safe collection and disposal.



Think before you throw

Unwanted medicines are often dumped into the toilet, tipped down the sink or put out with the garbage, which starts a journey that can seriously harm the environment.

More than 300 tonnes of medicines find their way into waterways and landfill every year

We need to change our behaviours to solve this problem and give the environment a chance.



⚠ Don't flush medicines down the toilet.

Sewerage plants can't treat all chemicals in waste water, resulting in contamination of waterways.



⚠ Don't pour medicines down the sink.

Household medicines contain highly soluble chemicals which when entered into water systems can harm aquatic life.



⚠ Don't throw medicines into the garbage bin.

Household medicines disposed this way end up in exposed landfill sites.

RUM provides a far better alternative

By returning out of date and unwanted medicines to our local pharmacy, we can make our home a safer place. Help safeguard our community and protect our environment.

This is all we need to do... it really is easy



Step 1: sort through your medicine cabinet and drawers, putting to one side the out of date and unwanted medicines



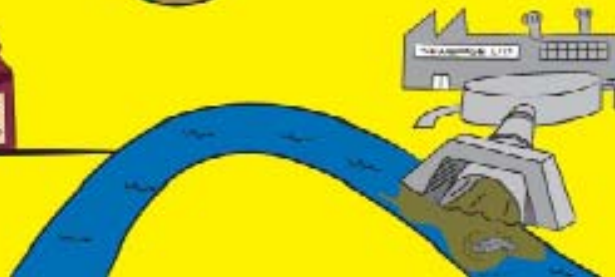
Step 2: take them to your local pharmacy



Step 3: give them to your pharmacist for proper disposal, and...



Step 4: tell your friends and relatives about the RUM project.



European Union (EU)

- 11 EU member nations have pharmaceutical take-back programs.
- All allow residents to drop unwanted medication at pharmacies.
- More than half of nation's systems are operated by pharmaceutical industry or by pharmacies; the rest are paid for by municipalities.

EU Continued

- Belgium, France, Luxembourg, Portugal, and Spain have take-back programs operated by the pharmaceutical network as a whole.
- Denmark, Finland, Germany, Italy, Sweden, and U.K. conduct take-back programs through pharmacies in collaboration with a public or private waste contractor.
- Successful programs:
 - Italy-- Associazione Indennizzo Resi
 - France-- Cylamed

**Need more info?
EPA's Drinking Water Hotline
(800) 426-4791 or visit.
<http://www.epa.gov/safewater/faq/>**



"I find it filters out the bigger impurities."

Resources

- EPA Pharmaceuticals and Personal Care Website
<http://www.epa.gov/ppcp/>
- Federal Guidance from the Office of National Drug Control Policy
http://www.whitehousedrugpolicy.gov/drugfact/factsht/pr_oper_disposal.html
- ICR on health care industry practices
http://yosemite.epa.gov/opa/admpress.nsf/names/hq_2008-8-6_pharm?OpenDocument
- Australia's RUM program <http://www.returnmed.com.au>

