Addressing Pharmaceuticals in Philadelphia Drinking Water

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Delaware Estuary Science and Environmental Summit
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Approach to Pharmaceuticals in Water Supply

- Media/Risk Communication
- Research and Sampling
- Education
- Partnerships/Dialogue
Pharmaceutical Use Worldwide

- Over $274 billion was spent on over 3.7 billion scripts in 2006
- UN projects a 3-fold increase in usage in next 25 years
Pharmaceuticals in U.S. Water Supplies

Pharmaceuticals in drinking water

- Water tested positive for pharmaceuticals
- Water tested negative for pharmaceuticals
- Water not tested for pharmaceuticals
- Test results pending

* In Virginia Beach, pharmaceuticals were found in source water but not in treated drinking water.
** Drinking water in Austin, Texas, was tested for only one prescription drug, a synthetic birth control chemical.

NOTE: All places include some surrounding areas except: Albuquerque, N.M.; Arlington, Texas; Fresno, Calif.; Long Beach, Calif.; Los Angeles; Memphis, Tenn.; New Orleans; New York City; and Orlando, Fla.

SOURCES: Drinking water providers’ responses to Associated Press questions, AP review of scientific literature.
Outcomes of Media Blitz

- 506 media pieces based on AP story
- Promoted “outrage” and concerns versus solutions
- Sparked awareness, policy discussion, and underscored need for improved risk communication
Philadelphia Takeaways

What Worked
- Proactive testing
- Being upfront
- Providing facts but being open about uncertainty

What Didn’t
- “The public won’t understand”
- Citing regulations
- “The water is absolutely safe”
- Reactive testing

Other Lessons
- Trust is most important factor in public response
- Perceptions must be treated equally with science
- Cooperate with press but don’t rush
- Keep City Hall informed
Media/Risk Communications

- Is our drinking water still safe?
- Is Philadelphia unique?
- How do pharmaceuticals get into drinking water?
- What did we find and how much?
- What is Philadelphia doing?
- What can I do to help?
- www.phila.gov/water
Research and Sampling

National Research
- AWAARF – Removal, toxilogical relevance
- USEPA – Occurrence (source and finished waters)
- PA DEP – Occurrence (source waters, fish tissue)
- USGS NAWQA – Occurrence
- Rutgers University – Occurrence (sediment)

PWD Research
- Sampling of source and finished water, major tributaries
- Examining removal efficacy of MIEX pilot plant
- Participating in research projects/staying abreast of research
### Pharmaceutical Testing Results for Philadelphia

<table>
<thead>
<tr>
<th></th>
<th>Source Water</th>
<th>Treated Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Samples Collected</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Number of Compounds Analyzed</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>Number of Compounds Detected</td>
<td>32 (not 63)</td>
<td>17 (not 56)</td>
</tr>
<tr>
<td>% of Compounds Detected</td>
<td>46%</td>
<td>24%</td>
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</tbody>
</table>
Philadelphia Education Pilot

- Focus on seniors and longterm care facilities
  - Potentially big meds sources; manageable

- Use takeback programs as primary educational tool
  - Active education
  - Best disposal method

- Utilize mail-in approach with reverse distributor
  - “New” approach
  - Deals easily with certain obstacles
    - State regulations
    - Tracking
    - Privacy
Philadelphia Education Pilot Cont’d

- Two Components:
  - Senior Center
  - Assisted Living Facility

- Led by Women’s Health and Environmental Network

- Funded by EPA and PWD

- Partners included:
  - Capital Returns
  - University of the Sciences of Philadelphia
  - Thomas Jefferson University School of Pharmacy
Philadelphia Education Pilot: Senior Care Center

Day 1
- Information Session – Problem and Pilot Solution
- Distribution of materials for mailing of unused meds
  - Envelopes
  - Printed Materials
  - Instructions

Day 2
- Mail-in Assistance Program
- Pharmacists and students available for questions
- Survey
- Snacks
# Senior Care Center Mail-In Program Results

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of pharmacists</td>
<td>5</td>
</tr>
<tr>
<td>Number of pharmacy students</td>
<td>6</td>
</tr>
<tr>
<td>Number of narcotics strikeforce officers</td>
<td>1</td>
</tr>
<tr>
<td>Information session participants</td>
<td>70+</td>
</tr>
<tr>
<td>Recipients of pilot materials</td>
<td>34</td>
</tr>
<tr>
<td>No. attending mail-in assistance program</td>
<td>15</td>
</tr>
<tr>
<td>Amount of drugs mailed in</td>
<td>3.12 lbs</td>
</tr>
<tr>
<td>Types of drugs: asthma, cough syrups, analgesics</td>
<td>34%</td>
</tr>
<tr>
<td>Most common reason for disposal</td>
<td>Expired meds</td>
</tr>
</tbody>
</table>
Philadelphia Education Pilot: Longterm Care Facility

- Assisted living facility
- Promote mail-in of unused pharmaceuticals
- Staff training
Lessons Learned from Pilot So Far

- Event-based takebacks are labor intensive for not much return
- Institutional changes may be better long-term approach
Regulatory Obstacles to Takeback Programs

- Drug Enforcement Agency requires that only law enforcement officers can receive controlled substances from consumers.
- In some states including PA, full regulation of hazardous waste if collected in a central location.
Policy Developments

- Drug Enforcement Agency and Obama
- EPA Universal Waste Rule Change
Next Steps

- Continue focus on disposal
- Focus on reducing prescriptions
  - Health care sector
  - Insurance companies and big box stores
  - AARP
Partnerships/Dialogue

- **Local**
  - Environmental Protection Agency Region III Pharmaceutical Workgroup
  - Schuylkill Action Network
  - Women’s Health and Environmental Network
  - Pharmaceutical Manufacturers/Distributors
  - Water Suppliers

- **National**
  - National Source Water Collaborative
  - Product Stewardship Institute
  - National list-serves
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National Activities

- **Collection Events**
  - Northeast Recycling Council
  - San Francisco Bay Area
  - Greater Chicago
  - Milwaukee
  - Washington State – Pharmacies

- **Permanent Collection Locations**
  - Teleosis Institute- Pharmacies, Doctor’s Offices, Health Care Facilities
  - Monroe County, IN – Household Hazardous Waste Facilities

- **Mail-back Programs**
  - Maine
  - Wisconsin
Takeback Program Resources

Northeast Recycling Council

http://www.nerc.org/topic_areas/unwanted_medications_Collections.html

Wisconsin Department of Natural Resources

http://dnr.wi.gov/org/aw/wm/pharm/pharm.htm
PWD provides drinking to ~1.7 million people

- 2 plants on Schuylkill River
  - 2,000 sm
  - >200 municipalities
  - 11 counties

- 1 plant on Delaware River
  - 13,539 sm
  - >800 municipalities
  - 4 states
  - 42 counties

- >10,000 point sources
Media/Risk Communications

- Is our drinking water still safe?
  - No documented health impacts
  - We are paying close attention
  - We drink the water too!

- Is Philadelphia unique?
  - No, this is a nationwide problem

- How do pharmaceuticals get into drinking water?
  - People!
Media/Risk Communications Cont’d

- What did we find and how much?
  - Eight, 8 oz. glasses of water for 800 years equals amount of caffeine in a cup of coffee
  - Low levels detected through better technology

- What is Philadelphia doing?
  - Monitoring
  - Staying on top of science
  - Engaging the public through media, web, etc.
  - Researching treatment options - no known treatment removes all compounds
What can I do to help?

- Do not flush or pour down the drain any unused or unwanted medicines.

- Crush leftover pills in a plastic bag, mix with coffee grounds or kitty litter, tape, conceal, and put into the garbage.

- Request partial prescriptions for new or temporary medicines

- Do not rely on tap filter systems or bottled water