



Medication Disposal... Why It Matters So Much

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Presentation Outline

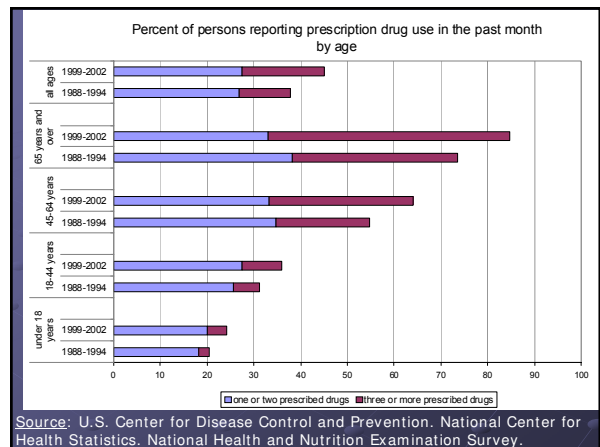
- Background on the issue:
 - Use and disposal of medications
 - Contributing sources
 - Disposal risks
- What's happening in Calumet County
 - Partnerships
 - Summary of May 07 household medication collection program
 - Future plans

Prescription Meds in WI


- The average number of prescriptions filled at the pharmacy:
 - WI -11.8
 - U.S. -10.8
- The average numbers of prescriptions filled by age:
 - Age 19-64:
 - WI -11.2
 - U.S. -10.5
 - Age 65+:
 - WI -30.8
 - U.S. -26.5



Source: Kaiser Family Foundation

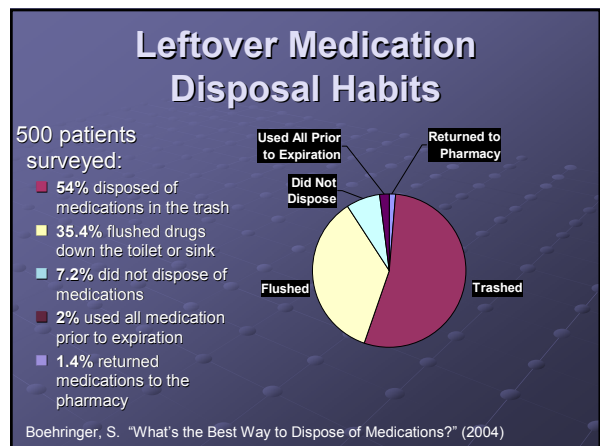


Causes of Unwanted Medicines



In some cases, medicines are not entirely consumed due to:

- Change in prescription
- Patient's health improves before finishing medicine
- Patient death
- Patient non-compliance
- Bulk "discount size" or "economy size" containers of over-the-counter medicines contain more than is needed before expiration date



So,....
...what's the big deal?



4 Main Risks of Improper Disposal Practices

- Environmental impact
 - Accumulation in waterways → potentially harmful effects on wildlife and humans. Much less significant than nitrates and pesticides, but a contributor
- Accidental ingestion (children & elderly)
 - 78,000 children/year under 5 treated for unintentional medication poisoning in U.S.
- Illegal use or theft
 - Appropriation of pharmaceuticals by family and friends, workers in homes, and burglars
- Unnecessary accumulation and waste of health care money



Medicines in the Environment

- U.S. Geological Survey 1999-2000 Research
- 139 streams analyzed in 30 states
 - Contaminants identified in 80% of these streams
 - 82 contaminants identified (many were pharmaceuticals)
 - Co-occurrence common; average 7 distinct contaminants identified per stream

Kolpin et al. "Pharmaceuticals, hormones, & other organic wastewater contaminants in U.S. streams, 1999-2000- a national reconnaissance." *Environmental Science & Technology*. 2002.

Effects on Aquatic Organisms: Cause for Concern?

- Aquatic exposure – chemicals in the aquatic environment can result in continuous, multigenerational exposure.
- Observations:
 - effects of antidepressants on fish and frog development
 - Ex: low levels of common anti-depressants, including Prozac, Zoloft, Paxil and Celexa, cause development problems in fish, and metamorphosis delays in frogs (Marsha Black, Univ. of Georgia)



Other Human/Environmental Effects?



- 5-10% of medications are hazardous wastes
- Affects on humans are currently unknown
- Possibility that improperly disposed antibiotics are helping create drug resistant bacteria
- Many scientists believe there could be unknown adverse effects related to long-term exposure. This continual, life-long exposure to trace levels is an unexplored domain of toxicology.

What's Happening in Calumet County?

- Public and private partnerships have formed within the county
- 4-county collection program held in May 2007
- County participation in state efforts
- Future program planned for October 2007

Partnerships

- Coalition of public and private service providers has formed to provide awareness, education, and collection events for residents in Calumet County
 - Aging and Disability Resource Center/Human Services
 - UW Extension
 - Health Department
 - Emergency Management Department
 - Land & Water Conservation Department
 - Sheriff's Department
 - Calumet Medical Center
 - Local pharmacies and medical offices
 - Local governments



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- 5 collection events held in four counties on May 1-3, 2007
 - May 1, Thompson Community Cntr, Appleton
 - May 2, Oshkosh Senior Center Annex
 - May 2, Chilton Senior Center
 - May 3, Little Chute Civic Center
 - May 3, Waupaca County Courthouse
- Open to any resident in each of the participating counties

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- Participants completed a brief survey providing their zip code, how they heard about program, and basic reasons for not using the medication
- Law enforcement official and licensed pharmacist were on site at all time per WI regulations
- Medications were sorted into two basic categories, as required by law: federally controlled substances and noncontrolled substances, and properly disposed
 - Law enforcement took possession of controlled subs
 - Hazardous waste vendor hauled noncontrolled subs

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of participants and medications collected

	Appleton	Chilton	Little Chute	Oshkosh	Waupaca	Totals
	177	43	55	207	108	590 participants
Controlled Substances (# of pills)	11194	1980	1677	6115	2975	23,941 pills
Noncontrolled substances (pounds of medicines)	396	101	94	423	225	1,229 pounds

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- Total Program Costs
 - Hazardous waste vendor for disposal, supplies, transportation and staffing = \$4,954 paid by Outagamie, Waupaca and Winnebago Cos.
 - Publicity and promotion = \$2,570 from COW ADRC grant and \$2,570 in-kind contribution from Willems Marketing
 - On-site staffing = estimated value at \$9,750 donated by pharmacists, private health care, law enforcement, students, and county employees

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- Participant Summary
 - Participants came from 44 distinct zip code areas
 - 42% of participants dropped off 13 or more containers of meds
 - 43% of medications had been stored for 2-4 years
 - 46% of meds were brought in because they had expired
 - 50% of participants were estimated to be over 65 years of age; 80% were estimated at over 46 years old

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What's Next for Calumet County?

- Will participate in a 4-county collection program October 24-26
- Participating as a member of WI Working Group on Pharmaceuticals to research future collection models, and develop educational materials for WI
- Involved with other partnerships and organizations attempting to solve this challenging problem