

Water Contamination

Recent studies throughout the US have revealed the presence of trace amounts of pharmaceutical compounds in surface and ground water. Pharmaceutical contamination of water has a negative impact on the aquatic ecosystem, including fish, birds and other wildlife.



Currently, the risk to humans is unknown so more study is needed. Experts believe that an increase in antibiotics in water may lead to antibiotic resistance in pathogenic organisms.

Scientists have not determined how much of the pharmaceutical contamination of water is due to human excretion and how much is derived from medications people flush down toilets and sinks.

As a medical professional, you can help reduce the amount of medications that may need to be disposed. To reduce the amount of unwanted medications being flushed by consumers and regulated facilities, some communities are helping by operating collection events.

Medication Disposal

- Separate unwanted medications from medical waste and sharps containers - Do NOT mix.
- Return unwanted medications to the drug supplier, through a reverse distributor or directly to the pharmaceutical manufacturing company, if possible. That company will determine how to properly dispose of the medications.
- Ask your drug sales representative to take back any unused samples. You may reduce your disposal costs by limiting how many free samples you accept.
- Dispose of medications properly based on the type of medication.
 - Do NOT flush medications without approval from the municipal wastewater treatment plant. What is acceptable in one community may not be allowed in another because treatment plants can have different requirements.
 - Do NOT flush medications if on a septic system, since this may result in costly system failure.



Types of Regulated Medications

Unwanted medications must be managed under the appropriate waste regulations depending on the type of medication. They may be regulated as:

- **Controlled substances.** These medications can be abused so disposal is overseen by the federal U.S. Drug Enforcement Agency (USDEA). Call the USDEA Detroit Field Office at 313-234-4000 with questions or see information at www.deadiversion.usdoj.gov/index.html.
- **Hazardous waste.** Medications are in this category when they are listed in the hazardous waste regulations or when they exhibit hazardous waste characteristics. In Michigan, facilities can choose to handle medications as universal waste. Medication examples that are managed as hazardous or universal waste are in the guidance at www.deq.state.mi.us/documents/deq-ead-tas-univwaste.pdf. The specific requirements depend on the total amount of all hazardous waste and universal waste generated at the facility, not just the amount of unwanted medications.
- **Nonhazardous liquid waste.** When the medications are in liquid form and are not hazardous waste, see the guidance at www.michigan.gov/documents/deq/deq-ess-p2tas-liwgenerator_207980_7.pdf for management requirements.
- **Solid waste.** When medications are not hazardous waste and do not contain liquids, it is acceptable to put them in the trash if the waste disposal company will accept. Consider placing the medications in the dumpster on the day of pickup to reduce scavenging.

Prescribing Medication Recommendations

You can help protect and preserve the environment for future generations by using the following recommendations when prescribing medications.

Environmentally Friendly Practice
Your Address, Michigan

For: _____

Address: _____

Date: _____

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- Prescribe only enough medication and/or provide limited free samples to see if that regime will work for your patient
- Prescribe the lowest effective dose
- Talk to your patients or veterinary clients about alternatives, including lifestyle changes that may minimize the need for long-term medication
- Let your patients or veterinary clients know that flushing unused medicines has potentially serious environmental implications. You can provide copies, or refer people, to the DEQ guidance *A Remedy for Prescription Drug Disposal* at www.deq.state.mi.us/documents/deq-ess-cau-rxbrochure.pdf which identifies alternatives to flushing medications from a home.

Signature: _____

For More Information

See the U.S. EPA website about Pharmaceuticals and Personal Care Products (PPCPs) and related links at www.epa.gov/ppcp.



Contact the DEQ Environmental Assistance Program by calling 800-662-9278 or email Deq-ead-env-assist@michigan.gov or contact your Waste and Hazardous Materials Division [District Office](#) with waste management questions.



Michigan Department of Environmental Quality

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Michigan Medical and Veterinary Care Facilities:

Guide for Prescribing and Disposing of Unwanted Medications



To Reduce Water Contamination from Improper Disposal