

# Don't Forget to Take Out the Trash!

Disposal of unwanted pharmaceuticals

By Alex Gershteyn

Every day pharmacists dispense thousands of medications and counsel each patient on proper use, side effects, and monitoring parameters. However, when was the last time a pharmacist counseled a patient on proper disposal of medications? Is this necessary? The answer is yes! A study done by the U.S. Geological Survey found that 80% of streams sampled in 30 states contain pharmaceutical, hormonal, and other organic waste.<sup>1</sup> The waste generated can contaminate soil or flow into the ground water and contaminate drinking water supplies. There is mounting evidence that “endocrine disruptors” (chemicals that mimic natural hormones) are having a negative impact on aquatic wildlife. Tadpoles are born without legs and hermaphroditic salmon are swimming in our lakes.

## WHAT THE LAW HAS TO SAY

The federal government states that once a drug is dispensed to a consumer it becomes household waste and is excluded from federal hazardous waste laws. However, if a pharmacy decides to collect

unwanted and expired medications from the consumer, then the federal hazardous waste laws apply because the medications are being handled by the pharmacy. In 1976, the Environmental Protection Agency (EPA) enacted the Resource Conservation and Recovery Act (RCRA) to promote proper waste disposal and to give us a better understanding of what hazardous waste is. In addition, to facilitate compliance with RCRA, the EPA has set-up corporate fines up to \$27,500 per violation per day.

## HAZARDOUS WASTE

RCRA defines hazardous waste by four characteristics: ignitability, toxicity, corrosivity and reactivity. Based on these four characteristics, medications are put on the P-List or the U-List. The chemicals on the P-List are considered to be the most toxic chemicals and include epinephrine, nicotine, nitroglycerin and warfarin. The chemicals on the U-List include chlorambucil, streptozotocin and mitomycin C, to name a few.<sup>1</sup>

## WHAT TO TELL PATIENTS

Unfortunately, there are not any good meth-

ods for consumers to dispose of unwanted or expired medications. The best thing you can tell them is NOT to throw them down the drain. You can also suggest to:

1. Dissolve the medication in a container.
2. Put a substance in the container to alter the taste (i.e. pepper).
3. Wrap the container with duct tape.
4. Put that container in another container.
5. Wrap the outer container with duct tape.
6. Put the container in the trash.

The purpose of this elaborate process is to make the medication unpalatable and prevent people from finding the medication and abusing it. The downside of the process is that it takes a lot of time and most consumers will be deterred from discarding their medications in this fashion.

## HOW TO GET INVOLVED

If your pharmacy would like to get involved in a take-back program of non-controlled substances, you can start by contacting the Wisconsin Pharmacy Examining Board and the Wisconsin Department of Natural Resources' Medical Waste Coordinator, Barbara Bickford (barbara.bickford@dnr.state.wi.us). Next, set-up proper hazardous waste disposal by contacting hazardous waste brokers (e.g., Onyx or Clean Harbors); without their help, it will be very difficult to handle hazardous waste properly. In addition, contact Kathy Federico (kathy.federico@usdoj.gov) at the Milwaukee DEA office. Present your waste disposal plan and get the DEA to approve the project. Further, there is a company based in Brookfield, Wis. called Pharmacology Associates ([www.pharmacology.org](http://www.pharmacology.org)). This

FIGURE 1. PROCESS OVERVIEW: RX INDUSTRY DISTRIBUTION AND REVERSE DISTRIBUTION MODEL

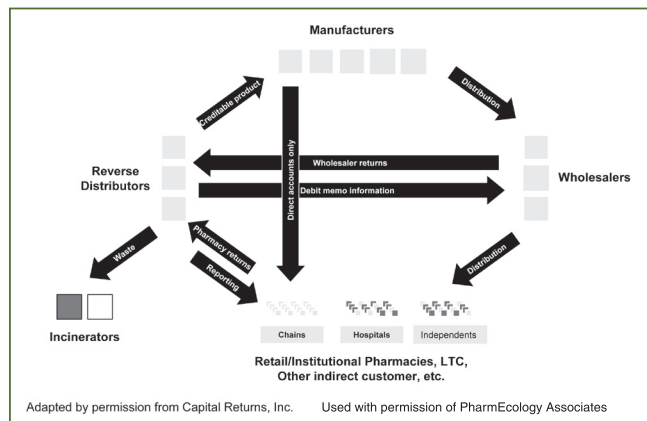


FIGURE 2. PROCESS OVERVIEW: PROPOSED CONSUMER RX RETURNS MODEL

