Taking Back the Drugs

Water quality professionals know that old, unused, and unwanted medications should not be disposed of down the toilet. The tough part is getting that message out to customers and then providing an alternative disposal method that is as easy as a flush.

Drug take-back programs are prompted by utilities' desires to keep excess pharmaceuticals out of the wastewater stream, said Brandon Koltz, vice president of Symbiont (West Allis, Wis.), an engineering and consulting firm. "Anything you can keep out of the wastewater stream is going to be beneficial," he said. "Obviously, anything that you keep out, you don't have to deal with later."

"It's an emerging concern for presences of substances … it's an awareness and trying to stay ahead of the curve," Koltz said. "This is the same thing as we saw 15 years ago with household hazardous waste."

In addition to protecting water quality, these programs also reduce avoidable poisonings from expired or misused drugs, as well as prevent the intentional misuse of prescriptions, especially by teenagers, according to Janet Gillaspie, executive director of the Oregon Association of Clean Water Agencies (ORACWA; Portland). ORACWA assembled a stakeholder group to make recommendations on how to approach this issue in Oregon.

Controlled Substances

Each program is organized a little differently, Koltz said. They can be single-day events, continuous drop-off locations, or even mail-in programs to return the drugs to the manufacturer. Regardless of the design, one issue continually present challenges: controlled substances.

Sorting out these challenges requires help from law enforcement.

The Controlled Substances Act (Title 21 *USC*) requires that drugs deemed *controlled substances*, such as narcotic painkillers, only be turned over to law enforcement officers, Koltz said. Additionally, "you have to have people as part of the collection programs, such as doctors or nurses or pharmacists, who are able to recognize and categorize the substances that you are collecting," he said.

The largest challenge that people face is dealing with U.S. Drug Enforcement Agency regulators, Gillaspie said. "You don't want to craft a program that is illegal, and the Controlled Substance Act is a very serious law," she said.

Put another way, "in order to legally collect unwanted controlled substances, it is an absolute necessity that law enforcement officials be on-site, participate in the collection, take physical control and custody of all controlled substances, and be responsible for their destruction as required by state and federal law," according to the publication *Operating Unwanted Medication Collections — A Legal & Safe Approach*, published by the Northeast Recycling Council Inc. (Brattleboro, Vt.).

In some cases, organizers of take-back programs have decided not to collect controlled substances in order to simplify their programs. For example, in 2004, Alachua County, Fla., took advantage of a grant from the Florida Department of the Environment to enact a continuous 5-month drop-off program.

Utility customers were asked to bring their unwanted or expired drugs to 12 locations throughout the county, according to Kurt Seaburg, hazardous waste coordinator for the Alachua County Environmental Protection Department. Each location, such as the county's hazardous waste disposal facility or a local pharmacy, was equipped with a 19-L (5-gal) steel-lined pail topped with a receiving funnel. The pails contained a weak hydrochloric acid solution that dissolved and neutralized the drugs, Seaburg said.

"Customers at these locations had to pour their medications into the funnel," Seaburg said. The customers were also responsible for disposing of the medication containers.

The program received the most deposits at the county's household hazardous waste center, Seaburg said. To measure the quantity collected, the pails and acid solutions were weighed before they went to the locations and then again after they were collected. During the pilot project, a total of 138 kg (305 lb) of drugs was collected. The collected waste was shipped to a hazardous waste disposal facility for incineration, Seaburg said.

In Oregon's case, the stakeholder group convened by ORACWA looked at the possibility of combining drug collection programs with household hazardous waste programs and decided that it was not a good fit for Oregon. Both the Oregon law enforcement community and the household hazardous waste programs were not comfortable with the additional burdens a drug take-back program would pose, Gillaspie said.

The Oregon stakeholder group is continuing to put pressure on the U.S. Drug Enforcement Agency to make regulations that would enable convenient take-back programs, Gillaspie added.

Funding

Even if the laws were changed to make handling controlled substances easier, the question remains who should pay for these programs. In most cases, the agencies working together to organize the event — commonly the wastewater utility, police or sheriff's office, and local medical organizations — share the costs. Or, as in Alachua County's case, a grant helps to defer the expenses. Alachua's 5-month program costs about $16,000. Once the grant expired, the county cut the program back to just four drop-off locations.

But ORACWA's stakeholder group believes another funding source exists. The group has recommended that Oregon's drug take-back program be financed by the drug manufacturers that serve Oregon, Gillaspie said.

So far, the group has not has much success in getting the pharmaceutical industry to foot the bill for a program, Gillaspie said. ORACWA has sent letters to the three respective trade associations representing name-brand, generic, and over-the-counter medications. The group also is planning to compose legislation for the 2009 Oregon Legislature that would ask manufacturers to put a program in place voluntarily. If manufacturers do not voluntarily institute a program, ORACWA will ask that manufacturers be forced to establish a program, Gillaspie said.

In its official report on the matter, the group does not give specific recommendations on what form the program should take. Instead, the group suggests that the drug manufacturers bring their business expertise to bear on how best to accomplish this goal.

Gillaspie added that whatever form the program takes, it needs to be "effective, serve all of Oregon — both rural and urban residents — and be as convenient as a flush."

The two most likely models, she said, are bin deposits at pharmacies and a mail-back program.

"Just think if we had a percentage of the drug and over-the-counter advertising budget for these companies that serve America," Gillaspie said. "Think about what percentage of the budget we would need to put an effective take-back program in place." She added that the companies could also use the take-back program materials as advertising pieces.

Education

Setting up the collection site or mail-in system is only half of the equation. An effective take-back program also requires a strong education component.

In fact, Seaburg said one of the biggest challenges to Alachua's program was getting the word out that the collection was happening. Program advertising and education was the second most expensive component of that program, second only to personnel costs.

Koltz said the need exists to educate users and medical care facilities, specifically those specializing in elder care, in the proper disposal of medications.

Some measures are as simple as providing flyers to pharmacies to accompany prescriptions on the proper disposal methods for unused medication, Koltz explained.

The U.S. Environmental Protection Agency (EPA), in its premiere Nov. 11 *Greenscene* video podcast, included a segment on the proper disposal of unwanted drugs. George Gray, associate administrator of EPA's Research and Development Office, told viewers to seek out their local drug take-back programs.

Gray added that if a take-back program isn't available, the Office of National Drug Control Policy advises residents to throw pills away in the trash and ideally mix them with something unpleasant, such as kitty litter or coffee grounds. That mixing is intended to prevent people from looking for controlled substances in others' trash. (But throwing unwanted drugs in the trash may just delay the issue in some parts of the country. Gillaspie said that because of Oregon's rainy climate, putting unwanted drugs in the landfill leads to them leaching into the water system.)

The educational movement extends beyond residents, too.

"The pharmaceutical industry itself is also being proactive in this area and working with its more direct customers, hospitals, pharmacies, and nursing homes, to take back expired and unused products [except controlled substances]," Koltz said.

There are also resources for agencies interested in creating a take-back program of their own. The Illinois–Indiana Sea Grant and EPA's Great Lakes National Program Office have created a guide to help communities initiate unwanted drug collection programs. The guide, *Disposal of Unwanted Medicine: A Resource for Action in Your Community*, includes background information on unwanted drugs, detailed instructions for holding a collection event, model materials, and a synopsis of take-back legislation.

Moving Forward

Just as European countries were first to act on microconstituents, those countries also are ahead on unused drug take-back programs. "The European programs are probably 10 years more mature than ours," Koltz said. But, whereas the U.S. programs are voluntary, the European programs are often mandated.

For example, since the 1980s, Italy has had one day each year where everyone is supposed to return their unused products, and pharmacies are supposed to clear the shelves of anything expired, Koltz said.

On the international front, ORACWA also has found a model to follow. “Our group was really inspired by the [mail-based] medicines return program that is in place in British Columbia now,” Gillaspie said. “Every pharmacy in the province participates. They collect unwanted pharmaceuticals. The program is totally organized and paid for by the pharmaceutical industry.”

While the U.S. and Canadian regulations on drug take-back are different, the British Columbia program demonstrates an effective, convenient, and cost-effective solution, Gillaspie said. “They’ve never had any diversion problems in the many years they’ve been running it,” she noted. “And interestingly, the City of Vancouver just passed a local ordinance that went into effect on the first of the year saying that you can no longer put unwanted medicines out in your household trash.”

Regardless of the legal and financial challenges to preventing these drugs from entering the wastewater stream and becoming microconstituents, prevention is the best method of handling the issue.

“Pollution prevention is always preferred over treatment,” Gillaspie said.

— ***Steve Spicer***, *UE*

More Drug Take-Back Information

The No Drugs Down the Drain Program
www.nodrugsdownthedrain.com/index.html

No Drugs Down the Drain is a public outreach program to alert California residents living in specific regions about the problems associated with flushing unused, unwanted, and expired medications down the toilet or drain, and to provide them with other safe and proper disposal choices.

Program sponsors include the City and County of Los Angeles, Sanitation Districts of Los Angeles County, Orange County Sanitation District, and the City of San Diego. The California Pharmacists Association (Sacramento) is a partner to the program.

Disposal of Unwanted Medicines: A Resource for Action in Your Community
www.iisgcp.org/unwantedmeds

The Illinois–Indiana Sea Grant and U.S. Environmental Protection Agency Great Lakes National Program Office have created this guide to help communities initiate unwanted drug collection programs. The guide includes background information in unwanted drugs, detailed instructions for holding a collection event, model materials, and a synopsis of take-back legislation.

Oregon Association of Clean Water Agencies
www.oracwa.org

The Oregon Association of Clean Water Agencies (Portland) is composed of 75 wastewater treatment and stormwater management agencies and associate members providing water quality services to Oregon’s urban areas. The organization convened an extensive stakeholder group to determine the best means to implement an unwanted drug take-back program for Oregon. The group’s full report can be downloaded from the site.

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