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How to Dispose of Unused Medicine Responsibly to Protect the Environment

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Would it surprise you to learn that taking prescription medication is part of the daily routine for an estimated 60% of adults in the United States?[1] Each prescription comes with extensive instructions about how to take the medication but offers little guidance on how to dispose of unused medicine.

Responsible medication disposal is important. Improper disposal of unused or expired medications has the potential to result in pharmaceuticals getting into the environment.[2] In fact, pharmaceuticals have been detected in surface water around the world.[2,3] So far, scientific studies have found minimal negative effects on human and animal health.[2] Nevertheless, evaluation, education, and action are required.[2,3]

“As a responsible company, we continually pursue solutions to limit release to the environment from our manufacturing processes,” says Louise Proud, Vice President, Global Environment, Health & Safety at Pfizer. “In addition, we provide information and resources to enable responsible disposal of unwanted medicine by our patients and other stakeholders.”

It takes proactive action from manufacturers, patients, and prescribers alike to ensure that unused and expired medications are disposed of properly.

How Medicines Can Enter Our Environment

Though it may be what first comes to mind, flushing unused prescriptions down the toilet or throwing them into the sink drain are not the only paths medicines take to wind up in our environment.[2,3] Medications that pass through our bodies, treatments given to animals within feedstocks (such as antibiotics), and waste from the manufacturing process are all ways that pharmaceuticals can enter the environment.[3]

Even though there are other ways for medicines to reach the environment, proper disposal of unused or expired medicines is important to help preserve the environment.[3]

Roles in Minimizing the Environmental Impact of Unused Medicine

Everyone has a role to play in minimizing waste from pharmaceuticals.

“We are committed to developing, designing, and supplying medicines for patients and reducing our environmental impact in a variety of ways,” Proud says. “And we need responsible actions from our patients and the caregivers that support them, as well, in terms of how pharmaceuticals ultimately are used and disposed of."

What Patients Can Do With Unused Medicine

It’s important to take medicine only as prescribed by a healthcare professional and commit to proper disposal of all unused or expired medications. For unused or expired medications, local collection programs can provide a safe disposal method that protects public health and the environment.[4] These methods vary by state, county, and country:[4] The FDA maintains a list[5] of permanent collection sites and periodic “take back” events as well as take-back guidance in the United States.

Similarly, Pfizer participates in a U.S. industry coalition called the Pharmaceutical Product Stewardship Work Group (PPSWG), which is a non-profit organization dedicated to helping the pharmaceutical industry dispose of household pharmaceutical products and to apply take-back laws for “sharps” (medical objects that could cut or puncture). Pfizer also works with MED-Project USA, which serves as the stewardship organization designated by PPSWG to implement and operate mandated take-back programs, explains Scott Smith, Senior Manager, Global Environment, Health & Safety at Pfizer.

In the U.S., beyond dropping off unused or expired medications at collection sites, most medications, whether in tablet, capsule, or liquid form, may be disposed in the trash. Remember to remove labels.[6] The FDA recommends putting drugs in a plastic bag with an undesirable substance, such as cat litter or coffee grounds, and throwing them in the garbage,[6] which is then taken to a regulated disposal site.

Most unused medicines should not be washed down the sink or toilet. The FDA does provide a "flush list"[7] of medications that pose a high risk of misuse or death if improperly taken. Flushing these more dangerous medications can protect others in your household or who might encounter your unused medication in the trash. Never flush any medication not on the list.[6,7]

What Prescribers Can Do

Prescribers also play a role in contributing to the responsible use of prescriptions. For instance, by prescribing an amount of medication that is needed for treatment of a current episode and reviewing treatment for chronic conditions on a regular basis, they may lessen the likelihood that a patient will have leftover medicine once their treatment ends. Prescribers can also act as educators to help patients understand the importance of taking all medications as prescribed and how to dispose of unused medicine properly.[3,8]

What the Pharmaceutical Industry Can Do

At an industry level, pharmaceutical companies and their supply chain partners can increase manufacturing efficiency to reduce waste, educate communities on the proper disposal of unused medicines,[3] and continue to advance scientific assessment of pharmaceuticals in the environment.

As research continues, companies, including Pfizer, monitor ongoing scientific developments and apply them to ensure that operating practices are up to date.

"We have helped governments in the US implement local compliance schemes, Smith says. “And we’ve fostered collaborations between large and small companies to support environmental responsibility and mitigate the impact of medicines on the environment.”

Elizabeth Hermsen, Global AMR & AMS Medical Affairs Lead at Pfizer, highlights the importance of a One Health approach[9] with consideration of human, animal, and environmental health.

“Pragmatic measures, including responsible manufacturing, use, and disposal practices, are key to minimizing potential negative impacts,” she says. “Effective stewardship requires multi-sector collaboration.”

In other words, it's up to everyone—industry, patients, doctors, and local governments—to keep our environment safe by ensuring that prescription drugs are handled safely and responsibly.

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, Learn more about the effects of pharmaceuticals on the environment and how to dispose of unused medicine responsibly.

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