

# Pharmacy dropboxes can help improve proper drug disposal, study finds

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Proper disposal of leftover medications can prevent overdoses and protect waterways from becoming polluted by pharmaceuticals. Drug take-back boxes are a safe and secure way to dispose of unwanted medications, but a new Portland State University study shows awareness of these dropboxes as well as knowledge about risks of improper

disposal remain low.

Amy Ehrhart, a doctoral student in PSU's Earth, Environment and Society program and the study's lead author, said the findings suggest efforts to reduce improper disposal should focus on legislation that mandates dropboxes at pharmacies and pressure on the [pharmaceutical industry](#) to fund proper disposal of unused drugs.

Federal legislation in 2014 allowed retail pharmacies to establish dropboxes within stores to collect leftover medications year round. The drugs are then collected and typically incinerated or disposed of as [hazardous waste](#), which is the Environmental Protection Agency's recommended approach. Flushing medications down the toilet and throwing them in the trash are discouraged because they pollute groundwater, rivers and oceans.

The study examined customer disposal behavior, pharmacist recommendations and attitudes regarding disposal of leftover drugs, and proper disposal implementation challenges.

Among the study's findings:

- Over a third of customers in the sample store their unused medications at home, and the most common disposal methods reported were throwing them in the trash (27.5%), flushing (15.8%) and using a dropbox (8.3%).
- The presence of a dropbox at a pharmacy was associated with greater customer awareness of proper [drug](#) disposal and safer pharmacist recommendations to customers.

"The focus group brought up that consumer education wouldn't be successful until we have more dropbox availability," Ehrhart said. "From their anecdotal experience, those dropboxes fill up quickly and then can't

be used until they are emptied."

The focus group also pointed to cost as a major hindrance to dropbox adoption, with participants heavily emphasizing that the pharmaceutical industry should be responsible for fronting the costs.

In 2019, Oregon joined five other states in approving a new law that requires drug manufacturers to pay for and run a statewide drug take-back program. The program is expected to be operational by July 2021. At the request of those pushing for the legislation, data collected from this and other PSU studies about the environmental effects of pharmaceutical pollution was shared with law and policymakers.

"Legislation that requires pharmaceutical manufacturers to pay for disposal or at least provide some kind of funding to have options for disposal is really important," Ehrhart said.

**More information:** Amy L. Ehrhart et al, Leftover drug disposal: Customer behavior, pharmacist recommendations, and obstacles to drug take-back box implementation, *Waste Management* (2020). [DOI: 10.1016/j.wasman.2020.08.038](https://doi.org/10.1016/j.wasman.2020.08.038)

Provided by Portland State University

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