

# Help Ensure Proper Medication Storage and Disposal

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Joanne Canedo, PharmD

*Education is key to providing information about proper techniques and bolstering patient safety.*

Pharmacy has helped increase the attention paid to the improper disposal of expired, unused, or unwanted medications that have accumulated in households. Improper disposal can have many negative consequences. For one, dumping medications or flushing them down the toilet can pollute waterways, damaging sometimes fragile ecosystems and perhaps introducing toxicity into certain species of animals and plants. Nondisposal can result in accumulation, which can lead to unintentional poisonings if the medicines fall into the wrong hands, such as children, as well as substance misuse and abuse for drugs such as opioids, when the nonprescribed user takes them or even them illegally to others.

Education is key in the efforts to mitigate these problems. Pharmacy technicians should seek additional education about these issues so they can pass that knowledge on to patients receiving medications.

These efforts are commensurate with other efforts aimed at bolstering patient safety.

Research on medication waste and disposal helps with the design and implementation of educational strategies and other interventions. Maeng et al examined patient characteristics and health care use patterns that may be associated with the reason behind unused medications among Medicare patients.<sup>1</sup> They observed that medication nonadherence is a major factor when it comes to accumulated medicines. Nonadherence and accumulation are especially problematic for patients with complex medication regimens, as these are often discontinued and/or change with no education or direction regarding the handling of unused doses. Findings from another study by some of the same investigators showed that the majority of accumulated medications were antibiotics and those prescribed for hypertension and pain, many of which are controlled substances.<sup>2</sup> Medications such as opioids are often stored improperly in homes, where they may be easily accessible to family members, specifically children.<sup>3</sup> The results of another study showed that among calls to poison control centers regarding accidental ingestions, more than 60% of children involved were younger than 5 years.<sup>4</sup> The evidence shows that drastic changes are needed in health care to implement proper education for the public about the risks associated with improper medication disposal.

West et al observed that though the environmental implications of inappropriate medication disposal have been reported, the public's knowledge about medication waste is inadequate.<sup>5</sup> In terms of disposal practices, the most common methods are discarding for garbage

collection and flushing down toilets. Although communities throughout the United States have begun to implement medication disposal programs, more efforts are necessary. One helpful piece of legislation, the Secure and Responsible Drug Disposal Act of 2010, permits law enforcement agencies to provide year-round drug donation boxes for collecting unused prescription opioids from community members. Involvement from law enforcement and philanthropic organizations can be instrumental in assisting pharmacies and other health care providers. Such is the case with the California Product Stewardship Council, for example, which lobbied for local drug take-back ordinances and worked with pharmacies throughout the state to implement hundreds of secure take-back bins.<sup>6</sup>

Based on these and other study results, it is clear that pharmacy employees are pivotal in closing the gap in patients' lack of knowledge about this public health challenge.

The provision of education on proper medication storage and disposal is paramount. Because pharmacists and particularly technicians are often the last individuals whom patients encounter when receiving prescribed regimens, they play key roles in facilitating proper storage of used and disposal of unused medications, particularly opioids.<sup>7</sup> Of course, greater technician knowledge around the entire issue of medication nonadherence would be helpful.<sup>1</sup>

Besides many of the well-known factors—such as adverse effects, the complexity of medication regimens, and drug costs—contributing to nonadherence, technicians would benefit from additional information about other related issues to further their role in patient care.

These include patients' intentional nonadherence to wait to see whether a condition is improved by not taking a prescribed medication, physician overprescribing, and even a belief by some that taking any medications regularly leads to physician dependence, even for drugs such as cholesterol-lowering agents and diuretics.<sup>7</sup>

Understanding nonadherence helps contribute to knowledge about possible accumulation and improper disposal.

Pharmacists and technicians can seize opportunities when providing education to strengthen their relationships with their patients. For instance, the provision of edifying information that helps a patient solve a problem will likely make them loyal to the pharmacy.<sup>1</sup> The medication use process is often thought of as consisting of prescribing, dispensing, and use.

However, it involves much more, beginning with the patient's receiving a diagnosis to their being adherent with medication use, storage, and disposal. Technicians who take a more holistic view of the medication use process can become even more important partners in ensuring optimal health outcomes.

***Joanne Canedo, PharmD***, is a PhD candidate at the University of Mississippi School of Pharmacy in University.

**Shane Desselle, PhD, RPh, FaPHA**, is a professor at the Touro University California College of Pharmacy in Vallejo.

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