



Research Brief

Taking stock of medication wastage: Unused medications in US households

Anandi V. Law, B.Pharm., M.S., Ph.D.^{a,*},

Prashant Sakharkar, Pharm.D., M.P.H.^{a,d},

Amir Zargarzadeh, Pharm.D.^{a,e}, Bik Wai Bilvick Tai, Pharm.D., A.E.-C.^a,

Karl Hess, Pharm.D.^a, Micah Hata, Pharm.D.^a,

Rudolph Mireles, Pharm.D.^a, Carolyn Ha, Pharm.D.^b,

Tony J. Park, Pharm.D., J.D.^c

^aDepartment of Pharmacy Practice and Administration, College of Pharmacy, Western University of Health Sciences, 309 E. Second Street, Pomona, CA 91766, USA

^bNational Community Pharmacist Association, Alexandria, VA, USA

^cCalifornia Pharmacy Lawyers, Irvine, CA, USA

Abstract

Background: Despite the potential deleterious impact on patient safety, environmental safety and health care expenditures, the extent of unused prescription medications in US households and reasons for nonuse remain unknown.

Objective: To estimate the extent, type and cost of unused medications and the reasons for their nonuse among US households.

Methods: A cross-sectional, observational two-phased study was conducted using a convenience sample in Southern California. A web-based survey (Phase I, $n = 238$) at one health sciences institution and paper-based survey (Phase II, $n = 68$) at planned drug take-back events at three community pharmacies were conducted. The extent, type, and cost of unused medications and the reasons for their nonuse were collected.

Results: Approximately 2 of 3 prescription medications were reported unused; disease/condition improved (42.4%), forgetfulness (5.8%) and side effects (6.5%) were reasons cited for their nonuse. “Throwing medications in the trash” was found being the common method of disposal (63%). In phase I, pain medications (23.3%) and antibiotics (18%) were most commonly reported as unused, whereas in Phase II, 17% of medications for chronic conditions (hypertension, diabetes, cholesterol, heart disease) and 8.3% for mental health problems were commonly reported as unused. Phase II participants indicated pharmacy as a preferred location for drug disposal. The total estimated cost for unused medications was approximately \$59,264.20 (average retail Rx price) to \$152,014.89 (AWP) from both phases, borne largely

^d Present address: Department of Clinical & Administrative Sciences, Roosevelt University, College of Pharmacy, 1400 N. Roosevelt Blvd, Schaumburg, IL 60173, USA.

^e Present address: Department of Clinical Pharmacy, School of Pharmacy, Isfahan University of Medical Sciences, Isfahan, Iran.

* Corresponding author.

E-mail address: alaw@westernu.edu (A.V. Law).

by private health insurance. When extrapolated to a national level, it was approximately \$2.4B for elderly taking five prescription medications to \$5.4B for the 52% of US adults who take one prescription medication daily.

Conclusion: Two out of three dispensed medications were unused, with national projected costs ranging from \$2.4B to \$5.4B. This wastage raises concerns about adherence, cost and safety; additionally, it points to the need for public awareness and policy to reduce wastage. Pharmacists can play an important role by educating patients both on appropriate medication use and disposal.

© 2015 Elsevier Inc. All rights reserved.

Keywords: Unused medication; Medication wastage; Medication disposal; Medication non-adherence; Health care management; Health economics

The potential presence of unused medications in US households has recently been receiving attention due to its implications regarding health outcomes, health care resource utilization, patient and environmental safety. In recent years, the U.S. Drug Enforcement Agency (DEA) and its state, local, and community partners have removed 1409 tons of unused medications as a part of National Prescription Drug Take-back Initiative.¹ First and foremost, unused medications in households “could be adopted as a direct measure of medication non-adherence by the patient population.”² Second, the impact of medication non-adherence on health outcomes and health economics is well established and needs to be addressed seriously.³ Third, unused medications left in households present potential safety issues such as accidental consumption by children.^{3–5} Lastly, unused medications that are inappropriately disposed could endanger the environment by contaminating surface and drinking water; and increase medication resistance (e.g. antibiotics), with possible genetic effects in humans and marine life in the long-term.^{6–8}

The issue of unused medications among US households has not been studied extensively despite its potential importance. Recent reports estimated that of \$2.3 trillion annual US health care expenditures, approximately 30% (\$700B–\$750B) could be attributed to wastage owing to unwarranted use, fraud and abuse, lack of care coordination, and system and provider inefficiencies.^{9–11} However, no breakdown was provided of wastage attributable to unused medications. Estimates of unused prescription medications varied in the literature, from 1.5 million pounds (in weight) (7–13%) in long-term care facilities to 2.8 million pounds (3%) by US customers.¹² The Teleosis Institute in California, which collected data on unused prescription drugs in 2007, reported that consumers

wasted nearly 45% of their medications.¹³ Studies on unused medications among hospital, nursing home and long-term care facilities have not reported their economic value.^{14–18} Studies conducted outside the US are not generalizable due to the differences in health care systems, payment structures, prescribing behaviors, and pattern of medication usage.^{19–24}

Thus, a knowledge gap exists regarding the extent of and reasons for unused prescription medications among households in the US. Given that medication utilization and expenditures in the US has consistently have increased each year, the impact of unused prescription medications on health expenditure also could be substantial.^{25–28}

Although an “in-home inventory” of prescription medications is considered an ideal method to study unused medications, resource constraints, privacy concerns and safety issues precluded this study approach. Given these challenges, web and paper-based surveys were developed and used for data collection.²⁹

The primary objectives of this two-phased study were to examine the extent, amount, type, cost, and reasons for unused medications among US households.

Methods

Study design

This was a cross-sectional, observational study conducted in two phases. In Phase I, a web-based survey was conducted at one health sciences institution; and in Phase II, a paper-based survey at drug take-back events.

Data collection tool

In this study, unused medication was defined as medication that is expired, discontinued,

Download English Version:

<https://daneshyari.com/en/article/2508348>

Download Persian Version:

<https://daneshyari.com/article/2508348>

[Daneshyari.com](https://daneshyari.com)