Title: Analysis and Comparison of 30- and 90-day Prescription Medications Returned to a Community Pharmacy Drug Disposal Program

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Purpose/Background: Providing medication therapy management (MTM) services to patients who appear to be non-adherent can improve star ratings assigned by the Centers for Medicare and Medicaid Services to Medicare Part D plans. Appointin-Based Medication Synchronization pharmacy models significantly improve adherence through regular pharmacist interactions and a single monthly appointment for 30-day medication refills. Under medication adherence programs, insurance plans are assigning MTMs to pharmacists in preferred pharmacies to convert Medicare Part D patients from 30-day fills to 90-day fills. Few studies have assessed medication waste from unused medications associated with 30-day vs 90-day fills. The results of this study may have implications regarding adherence incentives to convert patients to 90-day medication supplies, automated prescription refill programs, causes of medication waste, and cost-savings regarding quantity dispensed.

Objectives: To compare the quantities, characteristics, and financial costs associated with unused 30- and 90-day prescription medications returned to a community pharmacy and to determine previous disposal patterns and characteristics of participants in a community pharmacy drug disposal program.

Methods: This is a prospective, three-month convenience sample study in a community-based pharmacy in Richmond, Virginia. Patients 18 years and older who presented to dispose of prescription medications were included. Patients completed a 10-question written survey upon initiation of the medication disposal process. The survey collected the following demographic information: age, presence of minors in the household, type of primary prescription insurance, and enrollment status in automatic medication refill programs. Questions asked about medication disposal including if medications for disposal were obtained from a mail-order pharmacy, reasons for medication disposal, previous disposal methods for medications, and how patients heard of the medication disposal program at the community pharmacy. The following information was collected by a researcher from the prescription labels of the medications returned for disposal: drug name, drug strength, quantity dispensed, quantity returned, day supply, date dispensed, name of dispensing pharmacy, and dispensing pharmacy address. Medication bottles without prescription labels were excluded. Financial costs were assessed by matching medications with the average community pharmacy insurance pay and out of pocket cost over the three-month collection period and financial analysis occurred by tablet ratio returned (quantity returned/quantity dispensed). Comparison between 30- and 90-day medications were assessed using Wilcoxon Signed Rank.

Results: Forty-one participants presented to the community pharmacy for drug disposal and completed the survey. Of the total eligible medications returned, 145 were 30-day supplies and 113 were 90-day supplies (n = 459). Average quantity returned was 30 units (67% quantity dispensed) for 30-day supplies and 83 units for 90-day supplies (71% quantity dispensed). Mail order accounted for 61% of the 90-day supplies returned and 2% of the 30-day supplies. Completed surveys determined the average age of medication owners was 55 years old (n = 58). Previous disposal patterns among participants were 31% returned to pharmacy for medication disposal, 25% used medication disposal day events, 2% disposed in
coffee grounds/kitty litter, 8% flushed down the toilet, and 33% disposed in the trash (n = 48, select all that apply).

**Conclusions:** Higher quantities of medications were returned for 30-day supplies than 90-day supplies, which suggests dispensing higher quantities of medication may be associated with higher medication waste.

**References:**