Potential Strategies to Reduce Pharmaceutical Waste

Study Results Prepared by the Product Stewardship Institute for the Florida Department of Environmental Protection

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Report # A10ECE
Introduction

I. Purpose of the Report

This study focused on identifying and assessing the process of prescribing, dispensing, and paying for pharmaceuticals. The results of this small, qualitative study are intended to provide information for use in the development of policy programs to reduce medication waste, especially prescriptions. The focus of this report is on policy recommendations and should be considered in the context of the results of other research, pilot projects, and other multi-stakeholder workgroups addressing these issues.

While this report identifies potential strategies to reduce pharmaceutical waste, additional work is required to determine the appropriate vehicle for implementation of each strategy. For example, some strategies may be implemented voluntarily in a company or healthcare facility, while others may require changes to state or federal law or regulations. In some cases strategies may vary for different states.

Some interviewees, and many participants in past Product Stewardship Institute (PSI) dialogues, have expressed that the misuse, and therefore waste, of prescription medications should as much as possible be addressed by preventing the onset of disease through healthy diet and exercise, as well as, through the use of non-drug therapies. While we respect and acknowledge this advice, we leave the development of programs, educational measures, and policies along these lines to others better suited to that approach.

II. Study Methodology

PSI worked under the auspices of Julie Becker, Ph.D., MPH, a public health researcher. This study was conducted by Dr. Becker as part of a Centers for Disease Control and Prevention Fellowship and was aided by the Philadelphia Partnership for Pharmaceutical Pollution Prevention (P5). This coalition of federal government, universities, non-profits, and water departments provided input in the development of the questions. PSI augmented the qualitative questions to include an additional focus on policy recommendations for PSI’s Florida-focused study.

PSI conducted 29 qualitative interviews from March – May 2010. Four groups were initially targeted: prescribers, pharmacists, consumer advocates, and health insurance providers. Additionally, representatives of three different pharmaceutical companies were interviewed to gain an even broader perspective on the strategies emerging from the interviews. All interviewees were either based in Florida or otherwise serve Florida residents through the sale of their product.

The identity of the individuals interviewed has been kept confidential by PSI and Dr. Becker, with whom the recorded interviews have been shared. PSI staff working on the project completed an online training, “Protecting Human Research Participants” by the National Institutes of Health (NIH), and conducted this project according to the standards upheld for qualitative, public health
research under the Institutional Review Board of the University of the Sciences of Philadelphia, Philadelphia, PA.

Interviews included representatives of the following groups:

- Health insurance providers: 2
- Prescribers and other healthcare providers: Registered Nurses (4), Doctors (5)
- Pharmacists: 7
- Pharmaceutical companies (including manufacturers of both generic and branded prescription drugs): 3
- Consumer advocates (including local government, healthcare advocates): 4
- Department of Veteran Affairs medical system: 3

PSI attempted to interview people working in diverse settings including: hospitals, nursing homes, hospice, retail clinics, medical schools, indigent medical clinics, and small and large retail and clinic based pharmacies. While diverse perspectives were sought through this multi-stakeholder study, PSI did not verify all statements made about regulations and requirements related to the prescribing, dispensing, and reimbursing of prescription drugs. The following information is based solely on the responses given and is intended to serve as the basis for further discussions with a broader group of stakeholders.
Overview of Potential Strategies: Characterizing Diverse Perspectives

This report is focused primarily on policies intended to reduce pharmaceutical waste accumulating in households, however, during this research input was also gained on ways to reduce waste in institutional settings including long-term care facilities, pharmacies, and doctors’ offices.

The following report provides a basic characterization of each policy option, the reasons for support, and the reasons for concern raised by all individuals interviewed. In many instances the potential benefits of a policy may far outweigh any possible difficulties; however, as this report is intended to serve as the basis for further debate we have included all major points raised, without attempting to weigh their relative merits.

Potential Strategies

1. Reexamine the expiration dates of certain prescription medications to reduce the number of drugs discarded due to expiration
2. Reduce direct-to-consumer advertising
3. Develop and implement continuing education programs for healthcare providers and pharmacists
4. Use vouchers instead of drug samples
5. Improve electronic medical records so they can be easily accessed by all healthcare providers and pharmacists, and include information about all prescriptions
6. Change co-pay structures so patients are not penalized for partially filling a prescription
7. Restrict automatic prescription refills delivered through mail-order
8. Limit the quantity of certain kinds of drugs that a patient can get the first time they fill a prescription (i.e., initial fill limitations or trial prescriptions)
9. Consider revising federal and state regulations which currently contribute to wasted medication
10. Create a database of environmental toxicity data for prescribers to consult
1. Reexamine the expiration dates of certain prescription medications to reduce the number of drugs discarded due to expiration

Pharmacists, pharmaceutical company representatives, and a professor of pharmacotherapy agreed it was likely that otherwise viable drugs are currently wasted due to conservative expiration dates. This is particularly relevant in the pharmacy and long-term care settings, where drugs must be cleared from the shelves when they are within a certain amount of time from their expiration. One study of a Florida pharmaceutical take-back program also found the primary reason consumers disposed of pharmaceuticals was because the medication had exceeded its expiration date.¹

One respondent held that the length of time the Food and Drug Administration (FDA) requires for stability tests (which determine expiration dates) may be arbitrarily short and many drugs may be effective beyond the period studied. If, for example, a stability study is commissioned for one year and after that time the drug showed no signs of degradation and remains 100% effective, the expiration date is nonetheless set at one year.

Changing expiration dates, if determined to be feasible, would require determination on a case-by-case basis and review of thousands of expiration dates already established by pharmaceutical companies and the Food and Drug Administration. The Department of Defense has found the savings far outweighs the expense of this testing. (In 1998, the D.O.D. saved $40 million with $260,000 spent on testing for a ratio of about 154 to 1).²

Reasons for support:

- Many respondents cited expired drugs, especially in long-term care and pharmacy settings, as a significant source of drug waste. In certain settings this is the largest single source of waste.

- Drugs cannot be sold within 6 months of expiration, even if they are intended to be used well within that time. This leads to waste prior to dispensing, when more of a drug is manufactured or distributed than is necessary.

- Department of Defense research has already demonstrated many drugs to be effective beyond their expiration dates under ideal storage conditions.³

Reasons given for concern:

- Extending expiration dates may result in people improperly using drugs they have stockpiled in their homes. For example, it is unlikely a patient would have the same medical condition for which the drug was initially prescribed several years later. (Currently, expiration dates for prescription drugs are set at no more than 1 year after they leave the pharmacy to prevent this kind of misuse.)

- Storage conditions cannot be guaranteed outside the controlled environment of a healthcare setting, so a drug may be rendered ineffective due to extreme temperatures or humidity. For

example, many people keep medicines in the bathroom which can become hot and humid. This could be exacerbated by keeping drugs for a longer time.

- Generally, people should not be encouraged to stockpile drugs they no longer need, as they may become available to illegal diversion or accidental poisoning. Therefore, extending expiration dates for drugs *still in the pharmacy* is perhaps most appropriate from a safety perspective, as well as most effective from a source reduction perspective because this is where much of the waste reportedly accumulates.

**2. Reduce direct-to-consumer advertising**

In 1997 the FDA relaxed regulations restricting direct to consumer advertising and since that time there has been a tremendous growth in pharmaceutical companies advertising their products directly to the public. Many interviewees were ardently opposed to this type of advertising, though pharmaceutical companies and a few other respondents emphasized its educational benefits.

**Reasons for support:**

- Patients may demand drugs that they do not necessarily need, whether for a new condition or as a replacement for a drug they are already taking. Nearly every pharmacist cited a direct correlation between the appearance of advertising and prescriptions for those drugs. Even though a prescription is still required to get the medicine, some interviewees offered that doctors do not have sufficient time with their patients to resist the pressure to give them the product requested. One doctor expressed frustration that it can take considerable time to convince a patient they do not have the condition which they saw in an advertisement and secondly that the brand drug they requested was not the appropriate treatment.

- Advertising may increase healthcare costs, as it encourages patients to seek the more expensive, branded drugs. (Generic drugs are not advertised.) Several stakeholders raised this issue, though it was generally of greater concern to those providing health insurance. Insurance providers and health care providers within the VA already actively encourage the use of the less expensive, generic drugs when available.

**Reasons given for concern:**

- Advertising serves to educate patients and helps them play a better-informed, more proactive role in their own healthcare. Even if after seeing an advertisement a patient seeks treatment for a condition they do not have, the advertisement is still beneficial because it has encouraged the patient to visit their doctor. One nurse believed patients are much more informed about their own treatment nowadays due to the information provided through advertising. A representative from a pharmaceutical company highlighted the benefits in cases where a new treatment is developed for a previously untreatable condition.

- While advertising may increase the number of prescriptions, it may not necessarily increase waste. A doctor could still provide a trial prescription (or voucher, or sample) to test the patient’s response to the medication first to determine if it is medically necessary.
Advertising alone does not lead to the dispensing of medications, as a prescription is still necessary. A doctor may also prescribe a generic version of the branded drug the patient requests, which would not increase costs.

3. Develop and implement continuing education programs for healthcare providers and pharmacists

The vast majority of participants responded that this study had challenged them to think about “waste” from a new perspective and admitted that it was not something many had considered beforehand. Nearly every respondent identified several “best” practices, which could be easily adopted by their colleagues if more individuals were aware of the problem. There was unanimous support for the creation of continuing education curriculum to increase awareness of the proper disposal methods for unwanted, unused or expired pharmaceuticals; the environmental impact of waste pharmaceuticals; and ways prescribing practice and dispensing of medication could be modified to reduce that impact.

4. Use vouchers instead of drug samples

Many doctors are given sample medications by pharmaceutical companies to dispense to their patients free of charge. These samples allow doctors to experiment with certain medications to see what the patient responds to best and reduce costs for uninsured or underinsured patients. These samples, however, often go unused, or may expire in the doctor’s office. Several pharmaceutical companies have supplemented these samples with a variety of “voucher programs” which allow a doctor to hand the patient a voucher redeemable at most pharmacies for a trial period. Currently these voucher programs are limited to certain brand drugs in most places, but using vouchers to replace all samples could reduce waste generated in doctors’ offices.

Reasons for support:

- Vouchers can reduce sample waste by streamlining supplies in the pharmacy and eliminating waste that results from unused samples dispensed in the doctor’s office.

- Vouchers can be more convenient for doctors who would no longer have to keep samples in their office. Doctors would be relieved of the burden of ensuring their samples were secure and not expired. Every doctor interviewed stated they would personally be in favor of replacing samples with vouchers and believed they would be a “relief” to many of their colleagues.

- May improve patient health care by allowing a more complete record of a patient’s care which would be visible to pharmacists and the insurance company. Currently samples may not be recorded on a patient’s medical record and therefore the patient may be at greater risk to be prescribed something that could interact negatively with another medication they are taking.

- A representative from a pharmaceutical company highlighted how these programs may present a win-win situation, by reducing the costs to pharmaceutical companies, but yielding the same results of encouraging patients to try the medication.

Reasons given for concern:
• Pharmacists were concerned these programs would increase their workload without necessarily compensating them for their time as patients would be returning to the pharmacy twice to fill their initial prescription rather than just one time.

• The extra step of redeeming the voucher could be too burdensome on patients particularly the very ill and the elderly who have limited mobility. Many healthcare providers emphasized that on the other hand the patients who do not take the additional step to travel to the pharmacy are likely the same patients who would not comply with the doctor’s recommendations in the first place.

• Voucher programs for branded drugs are already in place and patients occasionally do not use them in a way that would reduce waste. For example, one pharmacist reported that patients with a voucher for 10 days of a new medication will often bring that voucher along with a 30 day prescription written by their doctor and try to fill both at the same time, therefore eliminating any benefit that may have resulted from an initial trial period.

5. Improve electronic medical records so they can be easily accessed by all healthcare providers and pharmacists and include information about all prescriptions

With increasing specialization many patients have several doctors who cannot easily communicate with each other and may prescribe medications which do not interact well, or may be redundant if the patient does not disclose their full medical history. These errors should be caught by the pharmacists, but currently pharmacists only have access to the record of the prescriptions a patient has filled at their particular pharmacy. Patients’ medical histories are already being collected piecemeal with electronic medical records, within private pharmacy databases, and by pharmaceutical companies. Creating a centralized database of this information would provide easier access to a patient’s medical records than is currently available for pharmacists and healthcare providers. Alternatively, if the number of electronic medical records programs currently being implemented were integrated, there would be less need for a centralized database. Evolving technology may improve current electronic medical records programs such as ePrescribe so that they become fully integrated and therefore there may be no need for policy makers to act on this suggestion.

Reasons for support

• If healthcare providers had a full and accurate picture of the drugs a patient has been prescribed, it could reduce the chance of negative drug interactions as a doctor could evaluate potential interactions at the time of prescribing rather than relying on the patient to provide accurate information, or on the pharmacist to catch a potential interaction. Several health care providers noted the difficulty of obtaining a full medical history from their patients. This process is further complicated by the fact that due to increasing specialization, patients may have many doctors who cannot easily communicate.

• Pharmacists reported that they would be more likely to recommend a partial filling of a new medication if they could know with certainty it was a new prescription. Without a centralized database it is impossible for a pharmacist to know if the medication is new to the patient or if they are just filling it for the first time at that pharmacy. The pharmacist is currently dependent upon the customer raising the issue.
• Within the Veteran’s Administration healthcare system, a centralize database is already helping to improve coordination among doctors. Their centralized database allows a patient to seek care anywhere in the country and allows greater coordination between the patient’s doctors. The system flags duplicate prescriptions and possible interactions. This may have the added benefit of reducing “doctor shopping.”

Reasons given for concern:

• Aggregating large quantities of data increases the chance that a patient’s privacy could be compromised. As one doctor mentioned, this data is already being pooled by electronic medical records and is therefore already vulnerable, but since the various systems are not integrated the current system contains all the risks without the medical benefits.

• The expense of creating such a database could be quite high, particularly ensuring adequate security and given the need to coordinate so many individuals. Requiring doctors to purchase additional software could increase the costs of medical care.

• A database in and of itself would not automatically solve problems that result from improper communication between medical care providers and patients. Patients still may not disclose all of the medication they are taking, such as homeopathic medicines, to their healthcare providers. Some medical care providers do not consult existing computer-based technologies and might be less likely to take advantage of a new technology.

6. Change co-pay structures so patients are not penalized for filling only part of a prescription

Some co-pay structures provide an incentive for a patient to fill a longer 30 or 90 day prescription. It often costs the patient the same amount out-of-pocket to fill a 90-day prescription as to fill a 30-day prescription. Therefore, if a patient has an adverse reaction or another reason to stop taking a drug after just a few days, they have the remainder of the prescription leftover. For example, a patient starting on a new drug who stops taking it after 5 days would have 85 days worth of medication remaining if they got a 90-day supply, or 25 days worth if they had a 30-day supply. Due to current co-pay structures in most cases, patients are discouraged from getting smaller amounts of medicine at a time because each visit back to the pharmacy will require them to pay the co-pay again.

Reasons for support:

• Many doctors, pharmacists and a representative from a pharmaceutical company cited financial considerations, or the insurance company’s willingness to pay, as the patient’s primary consideration in deciding how much of a prescription to fill at one time. Some doctors reported that they sometimes write prescriptions for a 30-day supply instead of 10, for example, in order to satisfy patient demands.

• Current co-pay structures have driven many customers to use special programs at retail pharmacies such as Wal-Mart, Costco, or Publix which charge patients a very low flat fee ($10) for a 90-day supply. In many cases, this is significantly less expensive for patients to pay out of pocket for a 90 day supply than to have the same prescription filled though their insurance.⁴

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⁴ These retail programs also help people avoid the “doughnut hole” on their Medicare coverage.
• Changing co-pay structures could reduce costs to the patient. If it were cost neutral for a patient to get a 14 day trial prescription they might be less inclined to buy a 30 day supply of medication, if there was a chance they could have an adverse reaction after only a few days. This could also be beneficial for patients who find it more difficult to pay for a full prescription.

• It is not common for a patient to talk to their pharmacists about partially filling a prescription. Several pharmacists mentioned that a partial fill would only be discussed if the medication was particularly expensive, or if the patient was more cautious perhaps because they had just gotten off another medication they did not tolerate.

**Reasons given for concern:**

• Patients may prefer to fill longer prescriptions due to increased convenience and not due to financial incentives. A few doctors were concerned if they wrote shorter prescriptions patients would be less likely to comply.

• Current co-pay structures are designed to reduce costs within the medical system, therefore changing them could increase overall costs. Requiring additional visits to the pharmacy or further approval from a healthcare provider could raise costs.

**7. Restrict automatic prescription refills delivered through mail-order**

**Reasons for support:**

• There was a tremendous amount of support from doctors and nurses on this point. Many doctors disapproved of patients receiving so much medication without seeing their doctors more frequently to ensure the medication was still appropriate.

• Many respondents, including those within the VA, indicated that the VA Meds by Mail program is a significant source of waste as the vast majority of medications are dispensed in 90 day supplies and veterans are actively encouraged to renew their prescription as early as possible. In the current system it often takes several weeks before notification of death, or a change of medication has been received, often resulting in widows receiving a 90 day supply by mail. According to one VA administrator it would not be an administrative burden to update the computer system to reduce this waste.

• These programs may have unintended negative consequences on a patient’s health as pharmacists reported that these programs occasionally caused confusion for their elderly clients who received the incorrect medication.

**Reasons given for concern:**

• Restricting automatic mail order refill programs may increase costs to the patient. Requiring a greater number of visits to the physician’s office or pharmacy increases costs to the insurance
companies and pharmaceuticals management companies. These programs deliver medication very efficiently and at a low cost, particularly with maintenance medications.

- Requiring a patient to travel to the pharmacy may reduce patient compliance and effect treatment. In addition to impacting a patient's health it could result in more costly hospitalizations. These concerns were particularly expressed by respondents working for insurance companies.

- Restricting these programs may be very inconvenient for patients who currently use them, particularly patients with limited mobility or those who live in a rural area.

8. **Limit the quantity of certain kinds of drugs that a patient can get the first time they fill a prescription (i.e, initial fill limitations or trial prescriptions)**

With some medications, it can take several tries before the doctor and patient find the exact drug that provides the intended benefits without side effects. Within the VA medical system and some other insurance programs, patients can get only a limited amount of certain drugs the first time they are prescribed. The majority of the restrictions in place currently are driven by a desire to limit costs, but such policies could also be developed based on information about the types of drugs most commonly delivered to drug collection programs, such as take-back or mail back programs, as has been done in Maine.

**Reasons for support:**

- Ideally a patient would be able to try a sample or trial prescription to see if a drug is effective for them before purchasing a full 30 day supply. Samples, however, are only available for certain brand-name drugs and are only made available to certain doctors. Additionally, according to one pharmacist, the number of patients who have first tried a sample medication has decreased recently.

- Several doctors held that it would be medically advisable for patients to first try a shorter supply of medication, but due to cost considerations or a fear of patient non-compliance, doctors were often driven to write prescriptions for longer periods of time. When a patient is not in pain, they are less likely to return to their doctor's office until the problem resurfaces. On the other hand, a few prescribers reported using shorter prescriptions as a way to *increase* patient compliance by requiring them to return to the doctor's office more frequently.

- This may be beneficial financially for pharmacies as it encourages customers to return with greater frequency. It may also benefit insurance companies by reducing wasted pharmaceuticals.

**Reasons given for concern:**

- Patients may not be able to see their physician within a short time period. Due to the shortage of primary care physicians, it may not be practical for a family physician to ask patients to return after 10 days to determine whether the medication is working. This may be particularly true within the VA system. (Initial trial prescriptions may not necessarily require another doctor's visit if it is structured such that a patient has only to return to the pharmacy or contact a nurse by phone.)

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5 For example, Maine. See Dept. of Health and Human Services. Ch. 101 Sec 80 Pharmacy Services (80.07-6)
Could negatively impact health care as it may reduce patient compliance. Particularly the elderly, others with limited mobility, or those living in rural areas may not fill the rest of their prescription. On the other hand one nurse mentioned since geriatric patients see their doctors more frequently this would actually affect them less.

Many responded that it would be inappropriate to mandate a limit on certain prescriptions. This restriction may be inappropriate as the standard of care varies between conditions, and the law would need to account for the different time scales of different medications to take effect, show positive results, or manifest side effects. Several doctors expressed their belief that this decision should rest with the physician and the patient and not with the government or the insurance company. Many doctors raised principled objections to the government becoming more involved in the medical system.

Multiple participants recommended that this would be a change best handled by the insurance companies, to only cover a 30 day supply or less of an initial prescription. This step may be redundant as many insurance companies already restrict initial prescription size.

Requiring additional visits to the doctor may increase costs and patients may not return to their physician if they are required to pay to visit their doctor again. (The additional costs could be minimized if the patient only needed to call their nurse or doctor and did not have to return to the office.)

9. Consider revising federal and state regulations which currently contribute to wasted medication

Several federal and state regulations intended to protect patient safety are currently having the unintended consequence of creating significant amounts of waste in institutional settings. Revising these regulations requires careful consideration and stakeholder input to ensure the original intention of these regulations is not compromised.

Reasons for support:

- Interviewees who work in long-term care facilities raised objections to current federal and state regulations that may contribute to large amounts of waste being unnecessarily generated in their facilities. Because medication dispensed in long-term care facilities is treated as is if the medication was dispensed to an individual patient, these facilities cannot reissue unused medication to other patients even if this medication is in sealed packages (blister packs, or inhalers for example.) For example if a patient in a long-term care facility is hospitalized they are not permitted to bring their medications with them. The patient will be reissued their prescriptions in the hospital and again when they return to the nursing home, resulting in 2 additional fillings. The majority of these patients are taking multiple medications.

- A representative from a pharmaceutical company raised his concern that pharmaceuticals are wasted due to a regulation which prohibits manufacturers from selling medications which are within six months of their expiration date even if that medication would be used well within that time period.

Reasons for concern:
• Changing this system would require a significant reevaluation of current regulations, including those governing pharmacies and the chain of custody for pharmaceuticals.

• There are public health risks associated with reissuing medication that may have been handled by someone who is ill.

• Programs already exist which allow medication to be donated under certain conditions.

10. Create a database of environmental toxicity data for prescribers to consult

A database which provides prescribers with environmental toxicity data on various pharmaceutical drugs has been developed in Sweden. This database was created with the intention of allowing physicians to easily compare medications based on their environmental impact, so they have the necessary information to choose the most environmentally benign medication for a specific purpose.6

Reasons for support:

• Creating an easy-to-use data base of toxicity data could encourage doctors to prescribe drugs which are more environmentally benign. Many healthcare providers liked the idea of having better information about toxicity and persistence.

Reasons given for concern:

• There was nearly unanimous consent that, while it would be good in an ideal world for doctors to do this, doctors are already too busy to consult another database while making their decisions. Doctors are more concerned about prescribing the right medication and that it will not interfere with a medication the patient might already be on, or prescribing a medication the patient has an allergy to.

Conclusions

Reducing the waste from unused prescription medication requires significant coordination and cooperation to ensure quality of care is not sacrificed. Despite numerous challenges we are heartened by the level of interest and enthusiasm expressed for many of the strategies above by a very diverse group of participants. Many interviewees believed that not only could these policies be implemented with relative ease, but that many were long overdue. Their support is underscored by successful efforts already underway around the country to test some of these strategies.

Respondents were most enthusiastic about reducing direct to consumer advertising, developing a continuing education program for healthcare providers and pharmacists, reexamining the expiration dates

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of prescription drugs, and replacing sample medications with vouchers. The majority of those interviewed were generally very supportive of the other strategies suggested, though some stakeholder groups raised some specific objections which have been noted. Our study only gained input from 29 individuals; however, of those very few believed that healthcare providers would have the time to consult a database of environmental toxicity data. It is also important to note that this last suggestion would not reduce the amount of medication which is wasted, but would only reduce the environmental impact of medication which is excreted or otherwise disposed of.

A significant percentage of waste currently generated could be reduced through reform of existing laws and regulations, for example regulations which prohibit long-term care facilities from reissuing medication in sealed packages to other patients, or regulations which prohibit drug manufacturers from selling medication that is within six months of its expiration date, even if the medication would be consumed within that window. Other sources of waste could be reduced administratively, for example updating the VA Meds by Mail system, changing co-pay structures to encourage trial prescriptions, or making it easier for patients to cancel their auto refill by mail programs. Each system should be examined independently to reflect the unique circumstances.

Other solutions require a widespread change in prescribing practice. It is important to note that while many healthcare providers and pharmacists recognized that these policies may require significant coordination and could increase costs or inconvenience, they nonetheless emphasized that these policy changes would be preferable from a medical perspective. Facilitating greater communication among a patient’s various doctors, for example, would most importantly improve medical care and could have the additional benefit of reducing the number of redundant prescriptions written. Experimenting with trial prescriptions for new medications is considered best practice from a medical perspective, but is not currently standard practice due to concerns of cost and convenience. Understanding that keeping healthcare costs as low as possible is of critical importance as it may determine whether a patient receives the treatment they need. It is also important to recognize that many societal and financial costs are currently externalized, including the cost of the diversion of waste drugs from the home.

We recommend further discussion and development of policy tools and more specific recommendations to determine the best method to implement the strategies described. We also recommend expanding this discussion to include other parts of the country and even broader stakeholder participation.