Mail-order pharmacy experience of Veterans living with AIDS/HIV

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Abstract

Background: The VA system is the largest single provider of healthcare in the United States and to individuals infected with HIV specifically. High quality medication management is particularly important since HIV is a chronic infectious condition which requires taking multiple medications with strict requirements for adherence to medication regimens. Veterans Administration (VA) patients are required to obtain all chronic medications using the VA mail-order pharmacy system.

Objective: Drawing on Donabedian’s Quality Improvement framework, this study sought to examine experiences that Veterans with HIV have with the Veterans Administration medication mail-order system, and to explore opportunities for quality improvement.

Methods: A sequential, explanatory mixed-methods design was used to interview Veterans receiving care at a Midwestern Veterans Administration Hospital using a mail-order experience survey followed by in-depth interviews. All 57 Veterans, out of 72, who were successfully contacted consented to participate.

Results: Overall, Veterans evaluated the mail-order service positively and valued the accuracy (correct medication delivery). However, a notable problem emerged with respect to assuring access to HIV medications with about half (47%) indicating running out of HIV medication. Respondents identified structural issues with respect to days covered by mailed medications (90 versus current 30 days) and process issues with scheduling new fills. Veterans also indicated the information sheets were too long, complex and not helpful for their queries. Patients were open to pharmacists playing an active role during clinic visits and felt this would help manage their conditions better.

Conclusions: Veterans generally reported that the VA Mail-order service was of high quality. However, some findings indicate there are opportunities to improve this service to be more patient-centered particularly for vulnerable HIV patients.

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1. Introduction

The Veterans Administration system is the largest single provider of healthcare to individuals infected with HIV. As of 2011, there were about 25,271 Veterans living with HIV, of which 97% were male. Hence, about 1 in every 250 Veterans is living with HIV. As HIV is a lifelong condition, its therapy has often been compared to other chronic conditions. The majority of VA patients with HIV get their medications through the Consolidated Mail-order Pharmacy (CMOP) system. Hence, the structure of the system and processes involved in obtaining medications through the mail-order system is important to maintain patients’ key outcomes.

What sets HIV patients apart from other mail-order users is their dependence on near perfect adherence for sustained HIV suppression and survival and the virus’s long incubation period (time from first acquiring HIV-1 to developing AIDS). This can range from a few months to over 10 years. Providing easy access to medications is crucial to allow individuals to maintain a stable condition. Improved treatment and increased longevity means HIV patients are developing other age associated conditions such as diabetes and high blood pressure and face higher morbidity rates. This in turn requires HIV patients to manage additional...
providers to ensure medications are obtained in an effective and efficient way.

### 2.2. Design

A sequential explanatory mixed methods study design was used to explore Veterans’ experience with the VA MOP system. Qualitative data collection was followed by qualitative data collection to explore and help explain the quantitative results (See Fig. 2). The intent was to provide a more robust analysis and explanation for patients’ perspectives of the mail-order system.

### 2.3. Setting

This study was conducted in a Midwestern Veterans Administration (VA) Hospital Infectious Disease Clinic. The systems used by this setting conform to the structures and processes of the VA system throughout the country with subtle differences. The Department of Veteran Affairs provides about 80% of all their medications through the VA CMOPs. The CMOPs are large-volume, automated dispensing systems designed to be efficient and low cost. Initially, newly diagnosed Veterans at the study setting may require more frequent visits to the VA clinic to tailor their medication regimen and suppress the infection. After this initial phase, patients typically get check-ups every 6 months or annually. After the initial check-up, the provider enters an electronic prescription request which is reviewed by a pharmacist for accuracy and verification. New prescriptions are commonly picked up at the VA outpatient pharmacy; however, subsequent prescriptions for HIV medications and other maintenance medications are usually sent via mail-order. It is the shared responsibility of the physician and pharmacist initially to educate their patients about the HIV medications they prescribe their patients. Two important process characteristics of the mail order system are important to note. At certain locations, including the case study site, only a 30 day supply is sent for HIV/AIDS medications whereas other maintenance medications have a 90 day supply. Second, patients are responsible for placing a request via phone or internet for the next refill to be shipped and may receive all medications in a single shipment or multiple shipments, depending on the number of medications, days supplied for each medication and prescription renewal dates. The mailed medications has a return address and a 1–800 number for their local clinic pharmacist to encourage patients’ questions to the original
medical facility and promote unimpeded local communication between providers and patients.

2.4. Recruitment, data collection & analysis

2.4.1. Phase I: quantitative phase

2.4.1.1. Recruitment and data collection. The survey interview was conducted with 57 patients 18 years of age and older with a diagnosis of HIV enrolled in the Infectious Disease Clinic at a Midwestern Veteran hospital between April–August 2015 (See Fig. 3.). Prior to their clinic visit, a letter informing patients about the survey was sent out to all Veterans in the sampling frame. Most HIV patients visit the clinic once in 4–6 months, while some may visit once a year. Hence, a combination of telephone and in-person modes for recruitment and data collection were used to contact a maximum number of patients. All surveys were conducted by a single researcher; hence consistent protocols were adopted.

2.4.1.2. Survey measures. Patients’ mail-order experience was measured using a scale adapted from an earlier scale by Larson and MacKeigan and Johnson et al. Considerable cognitive testing, feedback from a trained focus group and subsequent pilot testing with a small sample of HIV patients using VA & non-VA mail order patients informed the scale revisions. The final scale included questions on: (1) technical competence, (2) delivery service (3) written information and (4) oral communication. A frequency Likert response scale (Very often = 5, Often = 4, Sometimes = 3, Rarely = 2, Never = 1) was used rather than the commonly used “strongly agree-disagree” scale found to produce acquiescence bias and lower quality data. The final version of the scale included 15 items for all subjects, with three additional items just for respondents who had called the 1-800 phone number listed on their medication shipment.

2.4.1.3. Analysis. The data was analyzed using STATA 14.1. Negatively worded items were reverse scored. Item scores were aggregated for a new summary global score for Experience. Descriptive analysis of the data was conducted to determine frequencies, means and standard deviations where appropriate. The total score was used as a continuous variable for all bivariate analyses. Statistical tests were conducted at a significance level of 0.05. Cronbach’s Alpha was used to assess the internal consistency of the measures for MOP experience constructs.

2.4.2. Phase II: qualitative phase

The Phase II data collection explored patients’ experience in greater detail in order to help explain findings from Phase I. Questions were asked to elicit more detailed information on certain survey findings.

2.4.2.1. Interview guide development. The interview guide for the qualitative phase was developed for the following four major target areas: 1) Delivery system 2) Medication Supply 3) Information Sheets 4) Inclusion of pharmacist in care process. Questions were
drafted to obtain information specific to these process and structural aspects of the system and its impact. Draft interview questions were finalized after review by stakeholders and methods experts.

2.4.2.2. Data collection. Convenience sampling identified 10 consecutive Veterans with clinic visits for the qualitative interviews. All had completed the Phase I survey but their earlier surveys could not be linked in accordance with VA requirements that no identifying information be collected on the Phase I surveys. All 10 who were approached agreed to be interviewed in person during clinic visits. Responses to questions were recorded and transcribed.

2.4.2.3. Analysis. Systematic text condensation as suggested by Malterud was used to analyze the qualitative interviews in this study. This analysis included: (i) reading all the material to obtain general sense of the responses to each question; (ii) identifying units of meaning representing different aspects of the mail-order system, medication supply, information sheets and pharmacist inclusion; (iii) condensing and summarizing the contents of each of the themes delineated in the second step and finding meaning within the themes; and (iv) synthesizing the meaning into consistent statements regarding the subjects’ experience, reflecting patients issues and potential solutions. This project was exempt from IRB review as an approved quality improvement project.

3. Results

3.1. Quantitative survey phase

Initially a total of 76 HIV patients were believed to be actively receiving care at the Midwest VA Hospital and Clinic. However, 4 had moved and 2 passed away, leaving a total of 70. Of these, 57 (81%) could be contacted, all of whom consented to the survey.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Percentage (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>96.5% (55)</td>
</tr>
<tr>
<td>Female</td>
<td>3.5% (2)</td>
</tr>
<tr>
<td>Age</td>
<td>Mean (SD): 54.6 years (8.5)</td>
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<tr>
<td>&lt;50</td>
<td>22.8 (13)</td>
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<tr>
<td>51–60</td>
<td>56 (32)</td>
</tr>
<tr>
<td>&gt;61</td>
<td>21 (12)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>66.7% (37)</td>
</tr>
<tr>
<td>Black</td>
<td>33.3% (19)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>Less than High School</td>
<td>15.8% (9)</td>
</tr>
<tr>
<td>High School</td>
<td>57.9% (33)</td>
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<tr>
<td>Bachelor Degree</td>
<td>26.3% (15)</td>
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<tr>
<td>No. of HIV Medications</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>21.05 (12)</td>
</tr>
<tr>
<td>2</td>
<td>57.89 (33)</td>
</tr>
<tr>
<td>3</td>
<td>19.30 (11)</td>
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<tr>
<td>4</td>
<td>1.75 (1)</td>
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<tr>
<td>Years Since HIV Diagnosis</td>
<td></td>
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<tr>
<td>1–9</td>
<td>36.84 (21)</td>
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<tr>
<td>10–19</td>
<td>36.84 (21)</td>
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<tr>
<td>20–30</td>
<td>0 (0)</td>
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<tr>
<td>Over 30</td>
<td></td>
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<tr>
<td>No. of Comorbidities</td>
<td></td>
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<tr>
<td>0–3</td>
<td>43.86 (25)</td>
</tr>
<tr>
<td>4–6</td>
<td>40.35 (23)</td>
</tr>
<tr>
<td>7 &amp; More</td>
<td>15.75 (9)</td>
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</tbody>
</table>

3.1.1. Sample demographics

The sample consisted primarily of white (66.7%), male (96.5%) respondents with a mean age of 54.4 years (SD = 8.0) with a High School Diploma (57.9%). Table 1 provides a detailed description of the sample.

3.2. Mail-order pharmacy experience

All respondents obtained all their medications through the VA CMOP system. Most of the respondents, 70% (N = 40) ordered their refills by calling in the request, whereas about 30% (N = 17) ordered refills online. On average patients reported the medications arrived in about 8.72 (SD = 4.32) days after the order was placed through both systems.

The 15 item Mail-order experience scale had reasonable reliability with a Cronbach’s alpha of 0.73. Fig. 4 provides the percentages in each response category. As hypothesized the majority of Veterans reported a positive experience overall with the VA mail-order system. The mean aggregate mail-order experience scale score was 49 (SD = 6.5) out of a possible 80.

Means and other descriptive analyses of items in each domain in the Mail-order Experience scale identified respondents’ perceptions of the VA mail-order system as well as potential areas of improvement. Ratings were especially high related to technical competence. About 90% (n = 51) reported Never or Rarely having errors with the medications they received through the mail-order system. Also, patients reported high ratings for particular aspects of the delivery system. About 88% (n = 50) patients felt once the order was placed, it Almost Always or Usually arrived on time. Similarly, 94% reported Never or Rarely having problems when they travel suggesting the advantage of being served by the VA as a health care system that covers the US.

At the same time patients had concerns related to aspects of the delivery system and medication supply. About 40% (n = 23) reported Sometimes, Usually or Almost Always having issues ordering their medications using the system. The prescription size (number of days supplied per refill) seemed to be a major issue with about 45% (n = 26) indicating Usually or Almost Always having issues scheduling the refills because they only received a 30-day supply per refill. About half (47%) indicated Sometimes, Usually or Almost Always running out of their HIV medications. Moreover, about 83% Usually or Almost Always felt that a 90-day supply could help them manage their medications better.

A substantial percent of Veterans also reported concerns regarding written information and oral communication. Over half (56%) reported feeling the information they needed was not on the written sheet Sometimes, Usually or Almost Always. About 72% (n = 41) Veterans reported Never or Rarely finding the information sheets useful. Also, about a third (32%) didn’t realize there was a 1–800 number they could call to talk with a pharmacist, while others (81%) reported they had never called to speak to a pharmacist. About 9% spoke to a pharmacist at their VA site in person and only half (47%) spoke to their physician about their medication related questions. Additionally, many Veterans (53%) indicated that more frequent conversations with a pharmacist could help them manage their conditions better. There was no statistically significant difference based on order system used or mode of interview.

Individuals identifying as Black had a statistically significantly higher mean score on the mail-order experience (53.37) than those that identified as White (48.24), indicating Black Veterans reported having had a better mail-order experience than did White Veterans. Also, higher the level of education the better the experience with the mail-order system. Post hoc analyses identified that individuals who lived with HIV for 10–19 years had significantly higher (better) mean mail-order experience scores (58) than those with HIV for
20–30 years (48) or those with HIV for less than 10 years.

3.3. Qualitative phase results

As described earlier, the qualitative interviews were used to help explain and contextualize survey findings with a focus on identifying preferences and systemic alterations that could help HIV patients manage medications better. For that reason questions focused on the areas with the potential for improvement rather than those areas already evaluated positively.

In total, 10 qualitative in-person interviews were conducted using the interview guide. By the 10th interview, saturation was achieved. All 10 patients were male, 40–50 years; two were Black and eight White. All 10 received medications using the VA CMOP system and had answered the survey prior to being interviewed. All respondents were asked questions based on the Interview Guide and probed to provide specific information needed to formulate quality improvement recommendations. Themes identified below were seen in all interviews conducted (See Table 2).

3.3.1. Theme 1: structure of mail-order system

Patients were asked what affected their taking their medications the most. Eight out of the ten patients mentioned structural aspects of the mail-order system that affected taking their medications. These themes related to ordering the refills, the amount of medication supplied per refill and certain workarounds the VA had established to help when medications were not delivered.

3.3.1.1. Ordering/refills. Six patients (60%) mentioned concerns related to ordering/refilling their medications. Most comments related to their order not going through the system even though they placed the request for the refill. On further inquiry they were told the pharmacy had not received their request. In other cases the patient was informed that they needed to renew the prescription because they had run out of refills on their current prescription and the prescriber needed to renew the prescription resulting in delays. A second issue mentioned by one patient with several medications was his difficulty keeping straight which ones needed to be refilled and certain workarounds the VA had used to help when medications were not delivered.

3.3.1.3. Workarounds to resolve issues. Some patients mentioned ways that they or the system dealt with medication delivery issues. Some of these included overnight shipping and temporary medication from the on-site pharmacy. Some of these methods may be more efficient than others and can be explored more.

3.3.2. Theme 2: information needs

The survey indicated patients hardly ever read the information sheets provided and ran into situations where they couldn’t find information they needed on them. Patients were asked to point out the issues with the information sheets and ways to improve the information sheets to make them more useful for patients.

3.3.2.1. Issues with information sheets. All 10 patients indicated they did not read or use the information sheets, although one of them mentioned using the information sheet earlier when he was first diagnosed. Most (90%) of the patients interviewed mentioned the information sheets were too long or there was too much information. Three (30%) of the patients mentioned the language on the information sheets being too complicated to understand and one mentioned the print being too fine.

3.3.2.2. Suggestions. Most patients (90%) suggested shortening the length of the sheet and four patients mentioned using simpler language. Key information the patients thought should be on these sheets included medication purpose/use, how/when to take it, most common side effects, interactions/contraindications. Other information they felt should be included were number of refills left and who you can call if you needed any information or help.

3.3.2.3. Telephone access (1–800 number). Two patients (20%) indicated trying to use the 1–800 number to speak to a pharmacist. Other patients reported either not knowing about it (50%) or never using it (30%). Of the two that reported using the number, one seemed hesitant because he didn’t know who he was speaking to (a pharmacist, tech or other) and the other felt it was hard to get supply would help them manage their condition better. This was discussed further with patients to find how and why they felt it could be beneficial. Three patients (30%) mentioned scheduling and managing a steady supply of medications would be simpler. One compared it to a VA in another location, where the HIV medication was supplied for 90 days. Additionally, they felt they wouldn’t run out of medications so frequently.

3.3.3. Workarounds to resolve issues. Some patients mentioned ways that they or the system dealt with medication delivery issues. Some of these included overnight shipping and temporary medication from the on-site pharmacy. Some of these methods may be more efficient than others and can be explored more.

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<table>
<thead>
<tr>
<th>Themes and subthemes</th>
<th>Sample quotes</th>
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<tbody>
<tr>
<td><strong>Structure of System</strong></td>
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<tr>
<td>Ordering/Refills</td>
<td>Patient 1 stated: “Calling in an order and then you wait, you know, 10 days and you still haven't got the order, and you call them and find out that they didn't have any record that you made a call in even though you've gone through the system … and (they) say, “Oh, yeah, we found out, but, hey, we weren't able to get it to you.” … somehow it gets misplaced somewhere”</td>
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<td>Patient 2 mentioned: “They're real slow … problems getting your medications because the refill order didn't go through … I had to head to the ER … three times already”</td>
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<td>Patient 7: “The problem is sometimes, it's on me, sometimes, and I try to get estimated what's about two weeks' worth, because when I do call they said anywhere between seven and ten business days, and they actually get there within three … (for one medication) … I had to wait until it gets approved by the–I don't want to say psychiatric, but yeah, it's just that, and then it's an extra week.”</td>
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<td>Patient 10: “Ordering the medication. I try to have a system at home, but sometimes I get real confused with it … like I get confused as which one I– because I have like so many meds. … What month I order and what day. And then, you know, like a follow-up if that's necessary. And then sometimes I get confused did I order this one or not? I was taking (one medication) for my migraine … I had to reorder … And the request was submitted and I never got– I never got it … So I'm doing without”</td>
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<tr>
<td><strong>Medication Supply</strong></td>
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<td>Patient 5: “I think it should be 90 days. You know, because I think a person could keep tabs on their medication supply level better with a 90 day supply then the 30 day. … You know, you're not going to run out so fast and I think you would catch it diminishing quicker, you know, going away quicker. Being used quicker.”</td>
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<td>Patient 6: “I think because then you're not constantly stressing and worrying about, okay, well I've got to take time to call places or whatever. Because like I know I personally sometimes I'm just too tired. I know it takes me a few minutes, but I just want to go to bed. Then I'll say, well okay, I'll order it later when I get up and then I forget. So, yeah, I've cut myself short, yeah, remember … And I knew I could tell myself I've got to reorder because I only have so many left. Well, then I forgot. And two or three days later I reorder it. By then I have skipped like every other day to make sure that I would have enough until (get the next delivery).”</td>
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<td></td>
<td>Patient 7: “Beneficial. Very beneficial. Just the scheduling part …”</td>
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<tr>
<td><strong>Information needs</strong></td>
<td></td>
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<tr>
<td>Issues with Information Sheets</td>
<td>Patient 1: “(It's) Really thick. I mean, to get a little bottle of medicine and get this sheet back, you know, could be like 10 pages long … I could spend a day reading all the papers that come with the thing.”</td>
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<td>Patient 2: “I guess some of us are not that–that smart to understand some of the information.”</td>
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<td>Patient 3: “I don't read them. [laughter] I like to be honest. Up front. I don't know. It's, kind of, overwhelming because there's so much information.”</td>
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<td>Patient 8: “There's too much, too much …….. So it needs to be simplified ……. I don't read it. ……. You don't need a whole thing and all this. I don't need to know what's in my food either. If it says it's beef then it's beef. Pink slime? I got no problem with pink slime. Been eating it for how many hundreds of years and all of a sudden all it does is raise the price of food. Same thing with all this extra information. Just the cost of money to print it.”</td>
</tr>
<tr>
<td>Suggestions to improve information sheets</td>
<td>Patient 1: “I think it would be nicer if they could like break it down into a more simpler thing, so – I understand there's a lot of stuff they have to put on there, but, God, I mean, …”</td>
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<td>Patient 4: “And maybe if they can …Because there's so many different side effects with all medicines. I mean, you just become overwhelmed when you get it … So I'd like the side effects to be a little bit more practical. And I would like them to emphasize on what to do if you miss a dose. … And emphasize specific people that you can call …”</td>
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<td>Patient 6: “I guess what would be really convenient I think would be to include like, say, you have the amount of refills you have left so you can kind of keep an eye on that.”</td>
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<td></td>
<td>Patient 8: “What side effects, okay? With or without food. And that's about all you need to know, and how many times to take it. And what you're taking it for. That's all you need.”</td>
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<td></td>
<td>Patient 9: “I mean, to get a little bottle of medicine and get this sheet back, you know, could be like 10 pages long … I could spend a day reading all the papers that come with the thing.”</td>
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<tr>
<td>Telephone access using 1-800</td>
<td>Patient 1: “…Every time I've tried to call a pharmacist, it's almost impossible you're put on hold, and then they're just like try to get you off as quick as possible, especially here … At Phoenix, I could call … but here it's almost impossible.”</td>
</tr>
<tr>
<td></td>
<td>Patient 9: “(when asked about using 1-800 number) … I speak to Someone. I don't know who it is …. Yeah it's automated too …”</td>
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</table>
access to a pharmacist on the phone and feeling rushed through the conversation.

3.3.2.4. Inclusion of pharmacists. Throughout some of the interviews there was a general sense that patients felt their physicians/doctor took care of everything, including their HIV medication. They were more trusting of their doctors. Patients identified a number of issues that a pharmacist could potentially help with, but they had not experienced having a pharmacist included. However, when patients were asked about possible pharmacist involvement, most were open to the idea it could be helpful.

4. Discussion

This study addresses the needs of a vulnerable population of Veterans with HIV. Their medication management is essential for survival; however, to the best of our knowledge no prior study has examined their overall experience with the VA mail-order system. Patient-centeredness can best be achieved by understanding the patient experience and further asking patients how the system can be tailored to better meet their needs.

Perhaps the most striking finding of this mixed methods quality improvement study was how positively patients reported their experience was with the VA medication Mail-order system overall. They had strongly positive experiences with the technical competence with delivery, and reported only extremely rare errors in medications. Additionally, traveling did not seem to hinder medication use. Additionally in situations where medication orders were delayed, the system ensured patients received the medications as quickly as possible using two-day shipping or overnight delivery options.

Although mail-order pharmacies in general have been found to improve access to medications, this study found that prescription renewal and amount of HIV medication supplied was problematic at times. Patients identified opportunities to improve both process and structural domains in the VA mail order system for medications. One of the most frequently cited areas for improvement involved the process for ordering and scheduling refills. The mail-order system requires patients to order and schedule refill deliveries. Patients sometimes forget or miss managing these tasks efficiently, particularly because medication fills are not synchronized across different medications. Patients had to keep a close tab on the number of medications and the refills they have left for each medication. Given that more than half of the study participants have 4 or more conditions and use multiple medications, they had complicated reordering schedules to monitor. This was also complicated by their HIV medication being on a 30 day cycle while others were on a 90 day cycle.

Veterans reported that constraining the HIV prescriptions to a 30 day supply was a problem (Mean = 3.26). They believed that a 90 day supply could improve their HIV self-management. (Mean = 3.82). The 30 day requirement means patients need to request the next refill a minimum of 10 days ahead of when it is needed and possibly longer if they had completed the 6 refills. Although prescription length policies may be influenced by cost and waste concerns, studies found sending patients a longer months’ supply was associated with improved adherence and reduced acquisition barriers.

Further, patients described delays due to the fact that when a prescription renewal is needed, it must be sent through the Infectious Disease Clinic even if the patient has no medication change. It is common practice to provide 6 refills per prescription. After the sixth refill, the pharmacy cannot process a refill without a renewed prescription from the physician. This increased the time required to process and deliver the medications. Given these system difficulties there is a need to consider options to reduce the barrier for timely refilling medications. A system initiated automated ordering process could take the pressure off of patients.

The survey and interviews suggest the need to revise the medication information sheets sent with the mailed medications. Patients’ concerns about the length, complexity of language and at times lack of desired information undercut its usefulness. Positive models are available for simpler, clearer formats for patient information leaflets.

The 1–800 information number was rarely called by patients. A third did not realize it was available. Similar to the Bircher study, most patients went to their physicians or asked no one if they needed more information about a medication filled through MOP. Comprehensive medication reviews of their total medication regimens may be a potential area where clinical pharmacists could help not only identify and assist patients with medication related problems, but also offset some of the workload from physicians. A few studies have focused on evaluating the impact of pharmacists in the VA setting, and found their inclusion helped improve health outcomes by avoiding adverse events and simplified dosing schedules while simultaneously reducing or maintaining costs.

One patient suggested this would provide more understandable information than the medication information sheets.

5. Limitations

This study used self-report methods for data collection which may have social desirability or reporting bias. Second, although the sample characteristics were comparable to the general Veteran population with HIV, the VA Hospital study setting has a relatively small population of patients with HIV. Lastly, respondents may have felt survey fatigue due to the length of the survey which took 40 min to complete, depending on the number of HIV medications.

6. Conclusion

The mail-order pharmacy system offers an efficient and accurate
way to provide access to HIV medications. Veterans reported medication errors were extremely rare. The primary areas for improvement are related to access to medications and information. Refill processing/prescription renewal issues and shorter supply of medications were identified as key issues with important adher- ence and health outcome implications. Scheduling the refills or orders was a taxing task which some patients were not confident they could handle well. Synchronization of refills, reminder sys- tems, and larger supplies (90 day vs 30 day) would be useful to consider. Similarly, it would be useful to review patient information leaflets for clearer format and simplification. In the spirit of continuous quality improvement these issues hold an opportunity to strengthen an already effective system for its vulnerable HIV population.

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Discloser
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