

Out-of-Plan Pharmacy Use: Insights Into Patient Behavior

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Health plans, whether they are managed care organizations, accountable care organizations, or other types of care networks, often require their members to utilize in-plan pharmacies to receive subsidized prescription medications. Filling all prescriptions at the same pharmacy has been shown to decrease the risk for potentially harmful drug combinations.¹ Plan members may also fill prescriptions at unsubsidized prices at out-of-plan pharmacies (OOPP).² However, seeking prescription medications from multiple pharmacies, sometimes called “pharmacy shopping,” may contribute to medication-related problems, such as an increased risk for adverse drug interactions.^{3,4} The term “pharmacy shopping” suggests that this behavior is motivated by the goal of identifying the lowest medication cost. While actual patient-reported reasons for this OOPP use have not been well studied,^{1,2,5} some evidence does support medication cost as a factor. Discount generic prescription programs (DGPs) were introduced at several large chain pharmacies in 2006 and offer very low-cost generic prescription medications.^{1,6,7} Accordingly, the rate of prescriptions electronically issued to OOPPs has risen considerably since the introduction of DGPs.⁵ The influence of other factors driving OOPP use (eg, convenience, customer service, pharmacy loyalty) are largely unknown.^{8,9}

Information regarding the rationale for OOPP use is necessary in order to identify opportunities to improve patient safety, healthcare quality, and potentially member satisfaction. The objectives of this study were to describe if and where prescriptions electronically issued to an OOPP were filled, and the rationales for OOPP use among patients of an integrated health system with in-plan pharmacies.

METHODS

Study Design and Setting

This was a cross-sectional survey conducted in February 2013 among a random sample of 1000 patients from Kaiser Permanente Colorado (KPCO) who had a prescription electronically issued to an OOPP in November 2012.

ABSTRACT

Objectives

The purpose of this study was to identify and describe patient rationales for filling prescriptions at an out-of-plan pharmacy (OOPP).

Study Design

A cross-sectional survey conducted in February 2013 among a random sample of 1000 patients.

Methods

Adult Kaiser Permanente Colorado (KPCO) patients who had a prescription electronically issued to an OOPP in November 2012 were surveyed. The study questionnaire was developed using items obtained from the literature and prepared de novo, as needed. The questionnaire included items regarding whether the electronic prescription issued to an OOPP was filled; if filled, which OOPP was used; factors that may have influenced the use of an OOPP; and the patient's ability to afford medications. Responses to the survey were tabulated and reported as percentages.

Results

The survey response rate was 38%. Respondents (N = 382) had a mean age of 61 years, 35% were males, and anti-hypertensives were their most common OOPP prescription. Overall, 330 (86%) respondents reported that they had their prescription filled at an OOPP. The most commonly reported OOPPs utilized were supermarket pharmacies (42%). Factors that influenced the decision to use an OOPP included the prescription being less expensive (58%), the OOPP had a discount generic prescription program (57%), and the OOPP's location was convenient (44%). Thirty-nine percent of respondents reported that using an OOPP helped them afford their prescriptions.

Conclusions

Prescription cost and pharmacy convenience were identified as the most significant drivers of OOPP use. Future research should be conducted to assess the health-related consequences of OOPP use.

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Take-Away Points

- The rate of prescriptions electronically issued to out-of-plan pharmacies (OOPPs) has risen considerably, but factors driving OOPP use are largely unknown.
- A random sample of patients who had a prescription electronically issued to an OOPP were surveyed.
- The most common factors reported that influenced the decision to use an OOPP included that the prescription was less expensive at the OOPP (58%), the OOPP had a discount generic prescription program (57%), and the OOPP's location was convenient (44%).
- Out-of-plan pharmacy use may result in less expensive medications and increased convenience for patients; however, the risks to patients of using an OOPP are unclear.

Kaiser Permanente Colorado is a group model, not-for-profit, integrated health system with more than 500,000 members in the Denver/Boulder metropolitan area that uses an electronic medical record (EMR) (Epic Clarity, Madison, WI) with e-prescribing capabilities. The e-prescribing system allows for the identification of whether a prescription was electronically issued for an in-plan pharmacy or OOPP. Data for this study were obtained from queries of the KPCO integrated, electronic administrative databases; the EMR; and a 12-item questionnaire mailed to the random sample of patients. This study was sponsored by the KPCO Pharmacy Department and all aspects were reviewed and approved by the KPCO Institutional Review Board prior to data collection.

Study Population

Patients were eligible for inclusion in the survey if: (1) they were 18 years or older as of November 1, 2012; (2) they had a prescription electronically issued to an OOPP between November 1, 2012, and November 30, 2012; (3) their prescription was *not* for an over-the-counter, injectable, or infused medication or medical supply; (4) they had continuous KPCO membership for the 180 days prior to the prescription being electronically issued; (5) they were not residing in a skilled nursing facility at the time of the prescription; and (6) they were alive as of January 20, 2013.

A total of 12,827 prescriptions for 7841 patients were electronically issued for an OOPP in November 2012. Of these, 7531 (58.7%) prescriptions for 4177 (53.3%) patients were eligible for the survey. A random sample of 1000 eligible patients and their first eligible prescription electronically issued to an OOPP in the study month (heretofore termed the *index prescription*) was generated for the survey mailing.

Outcomes

The primary outcome was the group of patient-reported factors that influenced the use of an OOPP. Second-

ary outcomes included an assessment of patient-reported information on the OOPP used, patients' ability to afford medications, and pharmacy services use behaviors. In addition, a comparison of the characteristics of responders and non-responders was performed.

Survey and Data Collection

The study questionnaire was developed at KPCO using items obtained from the literature¹ and prepared *de novo* as needed to assess patient rationales for OOPP use. The questionnaire included information on the patient's index prescription along with the name of the prescriber, whether the index prescription was filled or not, which OOPP was used, factors that may have influenced the use of an OOPP, ability to afford medications, and general health perceptions. The questionnaire items were assessed for interpretability (ie, reading level, jargon, etc), content validity, face validity, and reliability among a sample of KPCO pharmacy department staff. No outstanding issues were identified among the items.

The questionnaire and a cover letter explaining the purpose of the survey, along with a return envelope, were mailed via the US Postal Service to the random sample during the third week of January 2013. A reminder postcard was mailed approximately 2 weeks after the initial questionnaire. HealthCare Research, Inc (Denver, Colorado) conducted the survey and collected information from the returned questionnaires. Each questionnaire included a unique identifier to allow for the linking of the survey results with patient characteristics.

Patients' demographic and health characteristics were identified using KPCO electronic administrative databases, including ambulatory visit, pharmacy use, membership databases, and the EMR. Administrative data collected included patient date of birth, KPCO membership status, sex, index prescription information (eg, index prescription drug class, in-plan medication purchases), socioeconomic demographics, and health plan information (eg, Medicare status).

Data Analysis

As this was a descriptive study, no a priori sample size calculation was performed. The types of OOPP reported as used to purchase the index prescription were categorized as: (1) big box (eg, Walmart, Kmart); (2) discounter (eg, Sam's Club, Costco); (3) chain (eg, CVS, Walgreens); (4) supermarket (eg, Krogers, Safeway); and (5) other (eg,

■ **Table 1.** Characteristics by Survey Response Status, as of November 1, 2012

| Characteristic | Overall Cohort (N = 1000) | Respondents (n = 382) | Non-Respondents (n = 618) | P |
|--|---------------------------------|---------------------------------|---------------------------------|-------|
| Mean age^a (SD) | 55.5 (15.7) | 60.6 (13.7) | 52.4 (16.1) | <.001 |
| Male (n, %) | 375, 37.5% | 133, 34.8% | 242, 39.2% | .168 |
| Race (n, %) | | | | .029 |
| White | 665, 66.5% | 273, 71.5% | 392, 63.4% | |
| Other | 80, 8.0% | 28, 7.3% | 52, 8.4% | |
| Unknown/unreported | 255, 25.5% | 81, 21.2% | 174, 28.2% | |
| Hispanic ethnicity (n, %) | 119, 11.9% | 33, 8.6% | 86, 13.9% | .012 |
| Medicare status (n, %) | | | | <.001 |
| Medicare with coverage gap | 211, 21.1% | 106, 27.8% | 105, 17.0% | |
| Medicare without coverage gap | 102, 10.2% | 56, 14.7% | 46, 7.4% | |
| Non-Medicare | 687, 68.7% | 220, 57.6% | 467, 75.6% | |
| HMO insurance plan (n, %) | 572, 57.2% | 258, 67.5% | 314, 50.8% | <.001 |
| Medication category (n, %) | | | | .024 |
| Analgesic/anti-inflammatory | 106, 10.6% | 43, 11.3% | 63, 10.2% | |
| Anti-hyperglycemic | 48, 4.8% | 17, 4.5% | 31, 5.0% | |
| Anti-hyperlipidemic | 37, 3.7% | 17, 4.5% | 20, 3.2% | |
| Anti-hypertensive | 215, 21.5% | 103, 27.0% | 112, 18.1% | |
| Anti-infective | 75, 7.5% | 18, 4.7% | 57, 9.2% | |
| Anti-neoplastic | 1, 0.1% | 0, 0.0% | 1, 0.2% | |
| Central nervous system | 173, 17.3% | 53, 13.9% | 120, 19.4% | |
| Erectile dysfunction | 49, 4.9% | 18, 4.7% | 31, 5.0% | |
| Gastrointestinal | 17, 1.7% | 4, 1.1% | 13, 2.1% | |
| Hematologic | 13, 1.3% | 7, 1.8% | 6, 1.0% | |
| Hormone | 158, 15.8% | 63, 16.5% | 95, 15.4% | |
| Neuromuscular | 22, 2.2% | 6, 1.6% | 16, 2.6% | |
| Topical | 29, 2.9% | 13, 3.4% | 16, 2.6% | |
| Other | 35, 3.5% | 13, 3.4% | 22, 3.6% | |
| Terminated KPCO membership^a (n, %) | 77, 7.7% | 10, 2.6% | 67, 10.8% | <.001 |
| Median count of prescription purchases^b (IQR) | 4 (0 – 12) | 4 (1 – 10) | 3 (0 – 13) | .892 |
| Median chronic disease score (IQR) | 0 (0 – 3) | 1 (0 – 3) | 0 (0 – 3) | .321 |
| Median family income (IQR) | \$63,690 (\$50,333-\$77,675) | \$64,641 (\$50,982-\$80,332) | \$62,232 (\$49,464-\$75,971) | .056 |
| Mean percent of households with some college education (SD) | 65.9% (17.5) | 66.6% (17.2) | 65.4% (17.7) | .283 |

HMO indicates health maintenance organization; KPCO, Kaiser Permanente Colorado.

^aBetween December 1, 2012, and January 31, 2013.

^bIn the 180 days prior to November 1, 2012.

independent pharmacy, Veterans Administration). Medicare status was categorized as Medicare beneficiary with a coverage gap, Medicare beneficiary without a coverage gap, or non-Medicare. Health plan type was categorized as traditional HMO or other (eg, preferred provider option, high deductible). Medications were classified into

therapeutic drug classes based on their National Drug Code. A chronic disease score (CDS), a validated measure ranging from 0 to 35 with a higher score representing an increased burden of chronic disease,¹⁰ was calculated from medication purchases during the 180 days prior to November 1, 2012. The count of in-plan prescription

■ **Table 2.** Responses to Survey Items (N = 382)

| Item | n, % |
|---|------------|
| Did you get this prescription filled at a non-Kaiser pharmacy? (n, % yes) | 330, 86.4% |
| Which of the following influenced your decision to choose that non-Kaiser pharmacy?^a (n, % yes) | |
| Convenient location | 145, 43.9% |
| Discount generic prescription program | 188, 57.0% |
| Family members get prescriptions there | 20, 6.1% |
| Good customer service compared with other pharmacies | 20, 6.1% |
| Knowledgeable staff | 18, 5.5% |
| No prescription drug insurance with Kaiser | 26, 7.9% |
| Prescription drug insurance other than Kaiser or Medicare | 8, 2.4% |
| Prescription not covered by Kaiser | 17, 5.2% |
| Prescription ready faster compared with other pharmacies | 24, 7.3% |
| Prescription was less expensive than at Kaiser | 190, 57.6% |
| Previous experience with a pharmacist or technician at that pharmacy | 18, 5.5% |
| Received extra incentive for getting prescription there (such as fuel points or in-store rewards) | 61, 18.5% |
| Do you inform your Kaiser pharmacist about the prescription(s) you get from a non-Kaiser pharmacy?^b (n, % yes) | 95, 29.8% |
| Do you inform your non-Kaiser pharmacist about the prescription(s) you get from a Kaiser pharmacy?^b (n, % yes) | 72, 22.6% |
| Has using the non-Kaiser pharmacy helped you afford prescriptions you otherwise would not have been able to afford?^c (n, % yes) | 123, 39.4% |
| In the past year, how many different non-Kaiser pharmacies have you used for your prescriptions?^d (n, % yes) | |
| 0 | 44, 11.8% |
| 1 | 238, 63.8% |
| 2 | 59, 15.8% |
| 3 | 15, 4.0% |
| 4 or more | 17, 4.6% |
| How easy or difficult was it for you to afford your prescriptions in 2012?^e (n, % yes) | |
| Very easy | 103, 27.4% |
| Somewhat easy | 72, 19.2% |
| Neither easy nor difficult | 114, 30.3% |
| Somewhat difficult | 62, 16.5% |
| Very difficult | 25, 6.7% |
| In general would you say your health is?^f (n, % yes) | |
| Excellent | 61, 16.2% |
| Very good | 133, 35.3% |
| Good | 124, 32.9% |
| Fair | 49, 13.0% |
| Poor | 10, 2.7% |

^a Among respondents who answered this question and got their prescription filled at a non-Kaiser pharmacy (n = 327); respondents could answer more than 1 item.

^b Among respondents who answered this question and got their prescription filled at a non-Kaiser pharmacy (n = 319).

^c Among respondents who answered this question and got their prescription filled at a non-Kaiser pharmacy (n = 312).

^d Among respondents who answered this question (n = 373).

^e Among respondents who answered this question (n = 376).

^f Among respondents who answered this question (n = 377).

medication purchases during this time period was calculated. Patient race was categorized as white, other, or unknown/unreported.

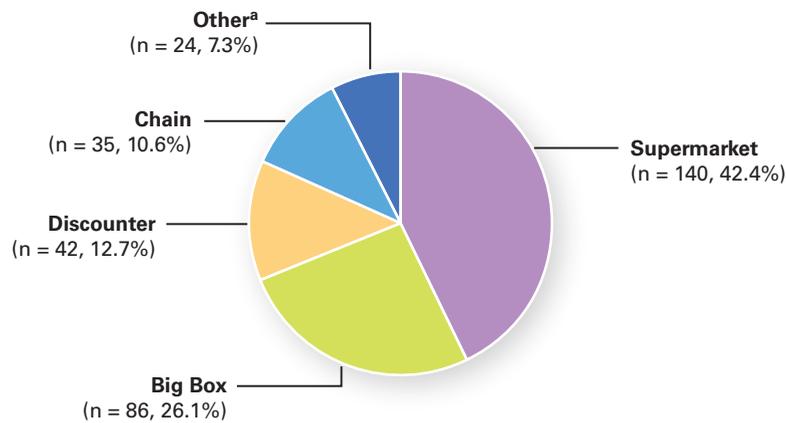
Responses to the survey were tabulated and reported as percentages. Patient characteristics were reported as means/medians and percentages, as appropriate. Differences between respondents and nonrespondents were examined using χ^2 tests of association/Fisher's exact

test and *t* tests, as appropriate. A 2-sided alpha was set at 0.05.

RESULTS

A total of 4177 patients with a prescription electronically issued to an OOPP in November 2012 were eligible for this study. A random sample of 1000 of these patients

■ **Figure.** Out-of-Plan Pharmacy Types



^a4 (30.7%) were from Canadian pharmacies; others include KMart, specialty pharmacy, Sav-On, and independent pharmacies.

were surveyed; 382 returned the questionnaire with usable data, for a survey response rate of 38.2%. Patients were stratified by survey response status into survey respondents and nonrespondents.

Survey respondents and nonrespondents were similar on sex distributions, count of previous prescription purchases at KPCO pharmacies, and socioeconomic indicators (all $P > .05$) (Table 1). However, respondents were more likely to be older and Medicare members and to have maintained plan membership during the 2 months following their index prescription order date (all $P < .001$). In addition, respondents were more likely to be white and less likely to be Hispanic than nonrespondents, and there were differences between groups across index prescription medication categories (all $P < .05$). The majority of respondents ($n = 194$, 51.5%) reported that they perceived their general health to be very good/excellent; this information was unobtainable for nonrespondents.

Overall, 330 (86.4%) respondents reported that they had purchased their index prescription at an OOPP (Table 2). Their prescription being less expensive at the OOPP ($n = 190$, 57.6%), the OOPP having a discount generic prescription program ($n = 188$, 57%), and the OOPP's convenient location ($n = 145$, 43.9%) were reported most frequently as factors influencing respondents' decisions to choose their OOPP. In addition, 61 respondents (18.5%) reported that receiving extra incentives, such as fuel discounts, was a factor. The most commonly utilized OOPPs were supermarket ($n = 140$, 42.4%) and big box ($n = 86$, 26.1%) (Figure).

Almost one-fourth of respondents ($n = 91$) reported that they had used 2 or more OOPPs within the past year (Table 2). Less than 30% of respondents reported that they

informed their Kaiser pharmacist ($n = 95$, 29.8%) or non-Kaiser OOPP pharmacist ($n = 72$, 22.6%) about their prescriptions filled at other pharmacies. Among respondents who reported using 2 or more OOPPs in the past year plus a Kaiser pharmacy ($n = 77$), 39% (30/77) reported informing their Kaiser pharmacist about their OOPP use.

While nearly a quarter ($n = 87$, 23.1%) of respondents reported that it was somewhat or very difficult for them to afford their prescriptions in 2012 (Table 2), 123 (39.4%) respondents indicated that using an OOPP helped them afford prescriptions they otherwise would not have been able to afford. Also among respondents who reported that it was somewhat or very difficult for them to afford their prescriptions in 2012 ($n = 87$), 69 (79.3%) reported that using their OOPP helped them afford their prescription(s). Among respondents who reported that their prescription, being less expensive at an OOPP, was a factor for using an OOPP ($n = 190$), 42.1% (80) reported that using their OOPP helped them afford their prescription(s).

DISCUSSION

In this survey of patients who had a prescription electronically issued to an OOPP in November 2012, we found that the most salient patient-reported factors given for using an OOPP were lower cost and convenience. These findings suggest that even patients with a defined pharmacy prescription drug benefit view prescription drugs as a commodity. Thus, "pharmacy shopping" may be a viable strategy for them to obtain prescription medications at a lowest cost. Most patients in our survey reported utilizing supermarket and big box retail pharma-

cies, reinforcing cost and convenience as drivers of OOPP use. Little information exists in the literature about why patients use an OOPP, and which one.^{1,5} Nevertheless, our findings do support previous research that identified convenience and inexpensive medications as factors that patients value.^{8,9}

Prescription cost makes sense as a commonly reported determinant of OOPP use, as this reinforces the theory that patients are concerned with prescription affordability.¹¹ Nevertheless, patients in our study reported that other factors, such as relationship(s) with a pharmacy's staff and a pharmacy's customer service also contribute to OOPP use. It is interesting to note that lower cost may not necessarily be equivalent to prescription affordability; while 57.6% of our respondents reported that their prescription was less expensive at an OOPP, approximately one-third of our respondents indicated that utilizing an OOPP helped them to afford prescriptions that they otherwise would not have been able to afford. This suggests that OOPP use among some patients is equivalent to buyers searching for the best bargain (ie, pharmacy shopping),² not an inability to pay for medications.

Additionally, our study found that convenience is an important factor influencing OOPP use. Respondents reported that they most commonly utilized supermarket pharmacies for medications electronically issued to an OOPP. As convenience is typically advertised as one of the benefits of utilizing a supermarket, this finding is not surprising and is consistent with previously published data that indicate supermarket pharmacies are the most common choice for prescriptions transferred to an OOPP.⁵ Our findings suggest that convenience is crucial for health systems with in-plan pharmacies to consider if their current prescription delivery model is to stay competitive in the changing healthcare landscape. Future research should be undertaken to assess whether more prescriptions would be filled at in-plan pharmacies if more in-plan pharmacy locations and/or longer pharmacy operating hours were available.

Our study found that approximately 14% of patients reported that they did not fill their prescription electronically issued to an OOPP. This proportion is numerically lower than but similar to that reported by Fischer and colleagues in their study of 3 Massachusetts health plans with e-prescribing capabilities who identified that 22% of electronically issued prescriptions were not filled.¹² These findings suggest another potential medication-related problem: failure to fill a prescription electronically issued to an OOPP. It is unclear if patients do not fill their prescription because they perceive medication costs as too

expensive, or because they are not interested in obtaining the medication, or for some other reason(s).¹¹

Other results from our survey are disconcerting as well: approximately one-fifth of respondents reported that they inform their OOPP pharmacists about medications they receive at other pharmacies. This is troubling because in-plan EMRs and OOPP pharmacy dispensing systems generally do not share patient-specific information unless a health plan contracts with a pharmacy benefit manager (PBM) to perform this service.¹³ Thus, the burden of ensuring communication across pharmacies about a patient's other medication use can rest largely with the patient. The potential for adverse medication outcomes with this behavior is substantial (eg, drug-drug interactions).¹³ It is unclear whether in-plan prescribers should discuss this gap in patient care when providing prescriptions electronically issued to an OOPP, ensure that their health plan has adequate drug utilization management coverage across pharmacies, or place the onus on patients to ensure that all of a patient's medication information is communicated to each of the patient's pharmacists. One low-tech option would be for prescribers to provide patients with a list of their current medications to share with their OOPP pharmacist.

Coupled with our current findings and previous work that revealed that approximately 5% of prescriptions are electronically issued to an OOPP,⁵ OOPP use appears to be an entrenched activity among a minority of patients. A retrospective analysis conducted in the Netherlands identified that approximately 11% of 45,805 patients from one insurance company were identified as OOPP users.² Additionally, Gatwood and colleagues reported from their survey of 414 patients in a university-affiliated general medicine clinic that approximately 32% of respondents engaged in OOPP use.¹ Therefore, it appears that different health systems have different rates of OOPP use, but that such use is ingrained.

Our study had several limitations. First, there was a moderate survey response rate. We attempted to encourage as many responses as possible by delaying survey administration until after the holiday season and utilizing a reminder postcard for nonrespondents. However, since we asked patients questions pertaining to their health-related behaviors that could be uncomfortable to answer and/or construed as their health plan checking up on them, it is unsurprising that a majority refused to participate. Second, patients may have felt compelled to respond in the affirmative (whatever they perceived the affirmative to have been), since it was a survey from their health plan. We attempted to mitigate the potential to answer in the

affirmative by wording our items to be as nonjudgmental as possible. Third, this survey was conducted in a health plan with its own pharmacies. Patients from health plans that utilize a network of pharmacies may have different rationales for use of an OOPP. In addition, our study did not examine medication-related outcomes for patients utilizing an OOPP. Future research is essential to determine the impact of OOPP use on medication-related outcomes. If such research shows harm from OOPP use, strategies to recapture OOPP-using patients into in-plan pharmacies will need to be developed.

CONCLUSION

In this survey of patients who had a prescription electronically issued to an OOPP, we identified cost and convenience as the most significant drivers of OOPP use. While factors such as lost revenue, impact on healthcare quality, and the inability to track appropriate medication use would appear to be harmful from the health plan's perspective, the risks to patients for using an OOPP are not clear. Future research should be conducted to assess the health-related consequences of OOPP use.

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