AMCP 2021

The Impact of COVID-19 on the Proportion of Patients Utilizing Mail Order Versus Retail Pharmacies

Cole Chambers, PharmD[1]; Ted Williams, PharmD, BCPS[2]; Anne Kangethe PharmD, MPH, PhD[2]; Michael Polson, PharmD[2]

1. Magellan Rx Management | Phoenix, AZ
2. Magellan Method, A Division of Magellan Rx Management | Phoenix, AZ

Background

- On March 13, 2020, President Donald Trump declared a U.S. national emergency in response to the SARS-CoV-2 virus (COVID-19)[1]
- As of February 22, 2021, COVID-19 had resulted in over 27 million U.S. cases, with 497,415 deaths in the U.S.[2]
- Patients with chronic diseases, such as diabetes, have shown to be more susceptible to severe illness from COVID-19[3]
- Physically picking up medications at a retail pharmacy may place patients at risk for COVID-19 exposure; therefore, mail order pharmacies appear ideally situated to offer a safe, contactless option for high-risk patients to receive their prescription medications
- In previous studies, mail order pharmacies have shown to improve patient adherence and consequently improve clinical outcomes for patients with chronic diseases
  - Mail order use improved adherence and LDL levels for new statin users compared to retail pharmacy use[4]
  - Mail order utilization demonstrated improvements in adherence, A1c values, emergency room visits, and hospitalizations for patients with type 2 diabetes versus retail pharmacy use[5]
  - A systematic review found that 14 of 15 included studies demonstrated improved adherence for mail order versus retail pharmacy utilization[6]
- Mail order pharmacies may offer patients an advantage over retail pharmacies; however, to date the impact of COVID-19 on mail order utilization has not yet been studied

Objective

- To determine the pre- and post-COVID-19 changes in the proportion of patients with type 2 diabetes filling non-insulin antihyperglycemic medications at mail order and retail pharmacies

Methods

Data Source & Study Time Period

- This retrospective, pre-post, administrative claims study utilized data from the Magellan pharmacy database
- Claims data was analyzed for a total study period of 2 years using March 13th 2020 (the date COVID-19 was declared a U.S. national emergency) as the index date
- The year preceding the index date (3/13/2019-3/12/2020) was defined as the baseline study period and the year following the index date (3/13/2020-3/12/2021) was defined as the follow-up study period

Inclusion Criteria

- Members with paid medication claims for ≥ 1 non-insulin antihyperglycemic medication as defined in Table 1, between 3/13/2019 and 3/12/2021

Exclusion Criteria

- Members in a non-commercial health plan
- Members < 18 years at the start of the study period or ≥ 65 at the end of the study period
- Members with no antihyperglycemic medication claims during the baseline period or with no antihyperglycemic medication claims during the follow-up period
- Members in a non-mail order utilizing health plan (no medications dispensed through mail order during the baseline period)
- Members with < 2 claims for at least 1 of the included study medications during the baseline period

Table 1. Included and Excluded Study Medications

Medications Included by Drug Class
DPP-4 Inhibitors/Thiazolidinediones
SGLT2 Inhibitors
SGLT2 Inhibitors/Biguanides
DPP-4 Inhibitors/Biguanides
Amylin Analogs
GLP-1 Receptor Agonists
DPP-4 Inhibitors
Insulin Release Stimulants (sulfonylureas, glinides)
Alpha Glucosidase Inhibitors
PPARG Agonists
Thiazolidinediones/Sulfonylureas
Insulin Release Stimulants/Biguanides
Thiazolidinediones/Biguanides
SGLT2/DPP-4 Inhibitors
Insulin/GLP-1 Receptor Agonists
SGLT2 Inhibitors/DPP-4 Inhibitors/Biguanides
Medications Excluded by Drug Class
Insulins
Biguanides
Mifepristone
Bromocriptine

Abbreviations: DPP-4 = Dipeptidyl Peptidase 4; SGLT2 = Sodium Glucose Cotransporter-2; GLP-1 = Glucagon-Like Peptide-1; PPARG = Peroxisome Proliferator-Activated Receptor

Among adult patients with type 2 diabetes in commercial health plans, **COVID-19 did not result in meaningful pharmacy utilizer status (retail, mail order, mixed) shifts.**

Methods cont.

Statistical analysis

- Included members were classified as either mail order, retail, or mixed pharmacy utilizers for each study period (baseline and follow-up)
- Utilizer classification was determined based on the percentage of overall day supply dispensed using either mail order or retail pharmacy services
  - Mail Order Utilizer: ≥ 80% of overall day supply dispensed using mail order pharmacy services
  - Retail Utilizer: ≥ 80% of overall day supply dispensed using retail pharmacy services
  - Mixed Utilizer: Any member not meeting criteria for a mail order or retail utilizer (< 80% of overall day supply dispensed via mail order or retail pharmacy services)
- All statistical tests were performed using SAS® Version 9.4
- Descriptive statistics such as mean, median, and standard deviation were used to describe continuous demographic variables. Counts and percentages were used to describe nominal and categorical demographic variables
- Differences in each utilizer status (mail, retail, mixed) from baseline to follow-up were compared using McNemar's test

Results

- A total of 13,234 members met the study inclusion criteria and were evaluated for pharmacy utilizer status shifts
- A statistically significant difference was not observed in retail utilizer status from baseline to follow-up (p = 0.0917)
- Mail order utilizer status decreased by 18.3% from baseline to follow-up (p < 0.0001)
- Mixed utilizer status increased by 31% from baseline to follow-up (p < 0.0001)

Table 2: Population Demographics (n=13,234)

Gender	n (%)
Female	5,546 (42)
Male	7,688 (58)
Age Category (years)	**n (%)**
18-30	134 (1)
31-40	853 (6)
41-50	3,234 (24)
51-60	6,710 (51)
61-64	2,303 (17)
Age (years)	**Mean (Median) [SD]**
Age	54 (55) [8]

SD = Standard Deviation

Figure 1: Baseline and Follow-Up Utilizer Status

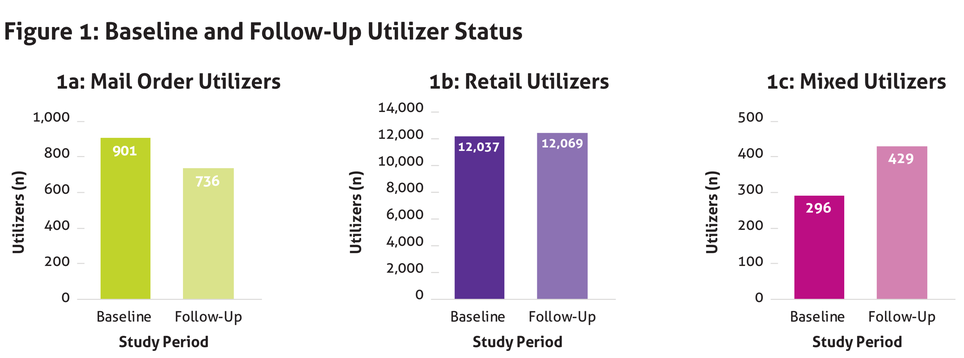

Table 3: Results

Utilizer Status	Baseline Utilizers n (%)	Follow-Up Utilizers n (%)	Percent Change	P Value*
Mail Order	901 (6.8)	736 (5.6)	-18.3%	< 0.0001
Retail	12,037 (91)	12,069 (91.2)	0.3%	0.0917
Mixed	296 (2.2)	429 (3.2)	31%	< 0.0001

*Statistically significant at p < 0.05

Cole Chambers, PharmD
chambersc@magellanhealth.com

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Discussion

Overall Impact of Study Findings

- Of the 13,234 included study participants, the majority of members (91%) were classified as retail utilizers. Overall, the number of retail utilizers from baseline to follow-up increased by a total of 32 members (0.3%), representing a non-statistically significant difference (p = 0.0917).
- The changes in the number of patients in the mail order and mixed utilizer groups (-165, p<0.0001 and +133, p<0.0001, respectively) account for only 2.3% of the study population, suggesting a minimal impact on managed care organization benefit designs or networking policy decisions.
- These findings, coupled with previous study data demonstrating increased chronic medication adherence and clinical outcomes for patients utilizing mail order services, suggest a potential opportunity for health plans and pharmacy benefit managers to promote mail order services as a safe and effective option during public health emergencies to their members.[4,5,6]

Limitations

- All mailed prescriptions, such as medications mailed from a retail pharmacy, may not have been classified as mail order claims. The service type code utilized to classify site of service was unable to differentiate in-person versus mailed retail prescriptions.
- Promotional and benefit design differences may play a role in where members decide to fill their chronic medications. Differences in plan specific benefit designs (reduced copays) or plan specific promotional differences for mail order and retail pharmacy services were not evaluated.
- Members aged 65 years or older nor Medicare members were included in the study evaluation. The elderly have been shown to be at higher risk of serious illness due to COVID-19 and therefore the pandemic may affect behavior differently in an elderly or Medicare population.[7]
- The COVID-19 disease and economic burden affected different geographical locations at different times and severities. This study assigned a single index date (3/13/2020) to all study participants and did not account for utilizer differences by geographical location.
- Claims for certain antihyperglycemic medications were excluded from the study (insulin, metformin, bromocriptine, mifepristone) and therefore study findings may not be generalizable to all patients with type 2 diabetes.
- Findings may not be generalizable to other chronic disease states beyond type 2 diabetes.
- Prescription claims not billed to the health plan were not captured for evaluation and therefore results may not accurately reflect all medications received by the patient.

Conclusion

- In commercial plan members with type 2 diabetes, the majority of members (91%) utilized retail pharmacies to fill their antihyperglycemic medications. COVID-19 did not result in a statistically significant difference in the proportion of retail utilizers within commercial plans.
- Statistically significant differences were seen amongst mail order and mixed pharmacy utilizers; however, these differences are likely of minimal impact due to the small overall utilization percentages compared to retail pharmacy.
- This study suggests a potential opportunity for health plans and pharmacy benefit managers to better promote mail order pharmacy services during public health emergencies.

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Disclosures

- This research was conducted by Magellan Rx Management, Phoenix, AZ, without external funding.