Effectiveness of Mail-to-Prescriber Letters to Facilitate Deprescribing of GLP-1 Agonist and DPP-4 Inhibitor Duplicate Therapy

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Background

- Many patients with Type 2 diabetes use two or more therapies to achieve adequate glycemic control.[1] However, not all therapy combinations are guideline-driven, efficacious, and safe.
- One such therapy combination is the glucagon-like peptide 1 (GLP-1) receptor agonist and dipeptidyl peptidase-4 (DPP-4) inhibitor drug classes, which are incretin-based therapies.
- Clinical data suggest GLP-1 and DPP-4 combination therapy does not provide additional benefit in glycemic control, and is associated with increased risk of adverse effects such as gastrointestinal disturbances and hypoglycemic symptoms.[2-4]
- The American Diabetes Association (ADA) does not recommend combination therapy with agents from the GLP-1 and DPP-4 classes due to their similar actions.[1]
- Furthermore, GLP-1 and DPP-4 agents are two of the most costly antidiabetic drug classes.[1]
- Thus, deprescribing initiatives which involve members using this combination are important to prevent member harm and manage drug costs.

Objective

- Evaluate the effectiveness of mail-to-prescriber letters to facilitate deprescribing of GLP-1 receptor agonist and DPP-4 inhibitor duplicate therapy.
- Assess out-of-pocket and health plan cost savings associated with the intervention.

Methods

DESIGN

- This pharmacy benefits manager-led retrospective study analyzed 12 months of claims data from 2020.
- Eligible members had paid claims for the duplicate therapy of interest over at least three consecutive months.

INTERVENTION

- Three interventions took place over the 12-month study period, where letters were mailed to prescribers on March 30, July 27, and November 30.
- Mail-to-prescriber letters contained a list of paid claims for the target drugs, name and contact information of prescribers, and a summary of safety risks.

OUTCOMES

- Member claims data from the four months following the interventions were analyzed and compared to pre-intervention data to determine relative cost savings and if deprescribing had occurred.
- The primary endpoint was the proportion of members no longer using duplicate therapy.
- Secondary endpoints included the difference in pre- and post-intervention per-member-per-month (PMPM) out-of-pocket costs and costs to health plans.

Figure 1. Example Duplicate Therapy Mail-to-Prescriber Letter



DRUG UTILIZATION REVIEW
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Customer Care

Duplicate Therapy QUICK ACTION SUMMARY

- This patient has been identified as receiving multiple medications with a similar therapeutic purpose.
- Please check with records to determine if this pattern of duplicate therapy is appropriate.
- If needed, collaborate with other prescribers and the patient to ensure optimal therapy and safety.

Duplicate Therapy Patient Profile
Date Range:
Patient Name:
Member ID:
Patient Address:
DOB:

Fill Date	Drug Label Name	Qty	Days Supply	Prescriber City, State, Phone	Pharmacy City, State, Phone
05/08/2021		90	90		
04/17/2021		90	90		
03/22/2021		180	90		
03/12/2021		90	90		

Results

Table 1: Baseline Member Demographics

Baseline Member Demographics (n = 1,109)	
Female, n (%)	558 (50.3%)
Male, n (%)	551 (49.7%)
Mean age, years (SD)	57.9 (10.3)
Commercial health plan, n (%)	630 (56.8%)
Medicaid health plan, n (%)	292 (26.3%)
Medicare health plan, n (%)	122 (11.0%)
Exchange health plan, n (%)	65 (5.9%)

The study identified 1,109 unique members who were using the duplicate therapy of interest and had letters sent to their prescribers.

Figure 2. Pre-Intervention Use of GLP-1 and DPP-4 Agents: Proportion of Members (n = 1,109)

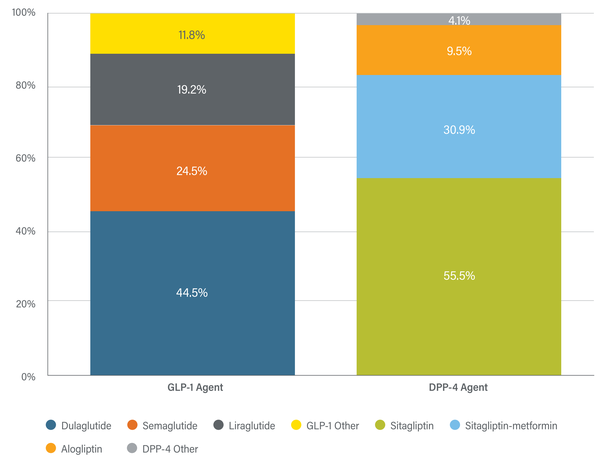


Table 2: Pre-Intervention Use of Duplicate Therapies and Typical Costs

Most Common Duplicate Therapies (n = 1,109)		
Agents	**Proportion of Members**	**Median Monthly AWP***
Sitagliptin and dulaglutide	21.8%	$1,525
Sitagliptin and semaglutide	11.8%	$1,541
Sitagliptin and liraglutide	9.5%	$1,729
Other combination	56.9%	-

* Cost data from American Diabetes Association[1]

Figure 3. Intervention Timeline

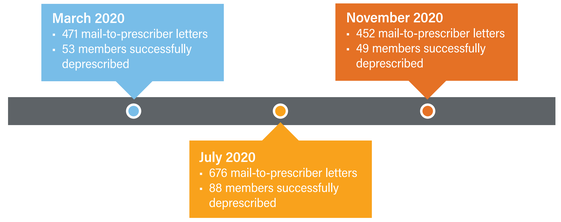


Table 3: Subgroup Analysis of Deprescribed Members

Proportion of Members No Longer on Duplicate Therapy: Subgroup Analysis*		
All members (%), n = 1,109	17.1%	-
Female (%)	17.2%	*P* = 0.882
Male (%)	17.1%	
Commercial health plan (%)	13.7%	*P* = 0.007▲
Medicaid health plan (%)	25.0%	
Medicare health plan (%)	18.0%	
Exchange health plan (%)	13.8%	

* The subgroup analysis aimed to determine if successful deprescribing was associated with gender or health plan type. Groups were compared using two-sided Pearson Chi-Square Tests with alpha of 0.05. No post-hoc pairwise comparisons were investigated.
▲ Indicates statistically significant difference between subgroups

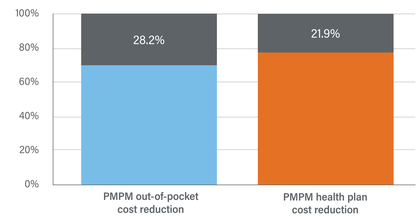
Table 4: Most Commonly Deprescribed Agents and Typical Costs

Most Commonly Deprescribed Agents (n = 190)		
Agents	**Proportion of Members**	**Median Monthly AWP***
Sitagliptin, n (%)	57 (30%)	$568
Sitagliptin-metformin, n (%)	32 (16.8%)	$596▲
Liraglutide, n (%)	15 (7.9%)	$1,161
Semaglutide, n (%)	13 (6.8%)	$973
Alogliptin, n (%)	10 (5.3%)	$234

* Cost data from American Diabetes Association[1] ▲ Cost data from Medi-Span (Wolters Kluwer N.V.)[6]

- Among 190 members who were successfully deprescribed one or more agents: sitagliptin, sitagliptin-metformin, and liraglutide were most commonly deprescribed compared to other agents.
- DPP-4 agents were deprescribed more often compared to GLP-1 agents.

Figure 4. Cost Savings



PMPM out-of-pocket cost savings of 28.2% and PMPM health plan cost savings of 21.9% among all members who were using duplicate therapy, including members who were not successfully deprescribed ($P < 0.001$ for both compared to baseline).

Limitations

- One limitation of this study is a lack of a true control group. The intervention was offered to all clients upon launch due to previous reports of success[5] with a similar program.
- No cost examination of other anti-diabetic medications in this study; thus, costs savings may be inflated if other therapies not within the GLP-1 or DPP-4 classes were initiated during the study period.
- This study did not examine safety events related to duplicate therapy to assess safety benefits; safety outcomes such as hypoglycemic events should be a focus of future research.

Conclusions

- The intervention significantly reduced the number of members using the GLP-1 receptor agonist and DPP-4 inhibitor duplicate therapy of interest.
- Significant cost savings were realized for both members and health plans.
- This mail-to-prescriber intervention is one method for payers and other stakeholders to promote safety and reduce costs using minimal resources.

Disclosures

This research was conducted by Navitus Health Solutions based in Madison, WI without external funding.

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