



Impact of Email Refill Reminders on Medication Adherence among Patients with Chronic Diseases in a Retail Community Pharmacy

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Patients receiving email refill reminders demonstrated better adherence to maintenance medications than patients who did not receive the reminders.

BACKGROUND

- Adhering to medication treatment regimens is crucial for chronic disease patients to ensure proper management of their disease. However, medication adherence rates are found to be low among patients with chronic diseases. Medication non-adherence may be a result of forgetfulness.
- Some retail community pharmacies have the technological infrastructure to send their patients automated email reminders to pick up a new or refilled prescription.
- While existing studies have examined patient receptiveness to receiving health-related information via email and the effect of these emails on behavior, little is known about the effectiveness of email refill reminders on patient medication adherence.

OBJECTIVE

- Our objective is to evaluate the impact of an email refill reminder system on patient adherence to medications used to treat chronic conditions.

METHODS

- Study Design: retrospective cohort study with a propensity matched control group.
- Test Group: patients who received email refill reminders for the first time in April 2013.
- Control Group: patients who did not receive any email refill reminders during the measurement period.
- Propensity Score Matching (PSM): the test group was propensity score matched 1:1 to the control group based on the following baseline characteristics: age, gender, unique number of medications (GPI6), patient status (existing or new to therapy), baseline adherence, and 10 specific therapeutic classes (GPI2).
- Measurement Period: 12-month follow-up from the sold date of the Rx which triggered the reminder
- Outcome Measures:
 - A. Medication adherence: proportion of days covered (PDC) and adherence levels (PDC < 50%, 50% ≤ PDC < 80%, PDC ≥ 80%)
 - B. Medication persistence: days on therapy and percent of patients on therapy

RESULTS

- Propensity score matching resulted in 14,527 patients for each group. Baseline characteristics were comparable between the test and control groups after PSM.
- One-year mean PDC and persistence for patients in the test group were significantly higher than the control group (Table 1).
- The test group had more adherent patients and fewer non-adherent patients than the control group (Figure 1).
- After one-year follow-up, 43.79% of patients in the test group stayed on their therapy compared to 40.99% in the control group (Figure 2).

Table 1. Mean PDC and Persistence

	Test Group	Control Group	Difference	P value
N (Pt GPI6)	17,530	17,382		
Mean PDC	51.5%	48.56%	2.59%	<.001
Persistence (Days)	236.01	228.11	7.90	<.001

**Figure 1. Difference in Adherence Level
(Test Group – Control Group)**

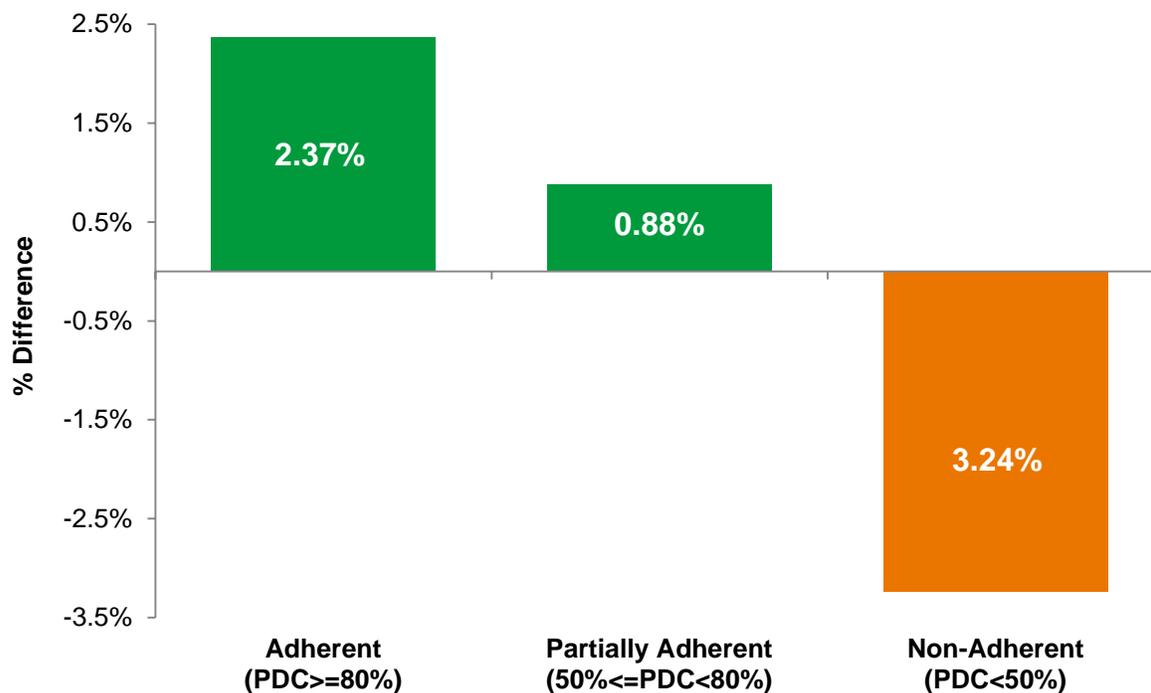
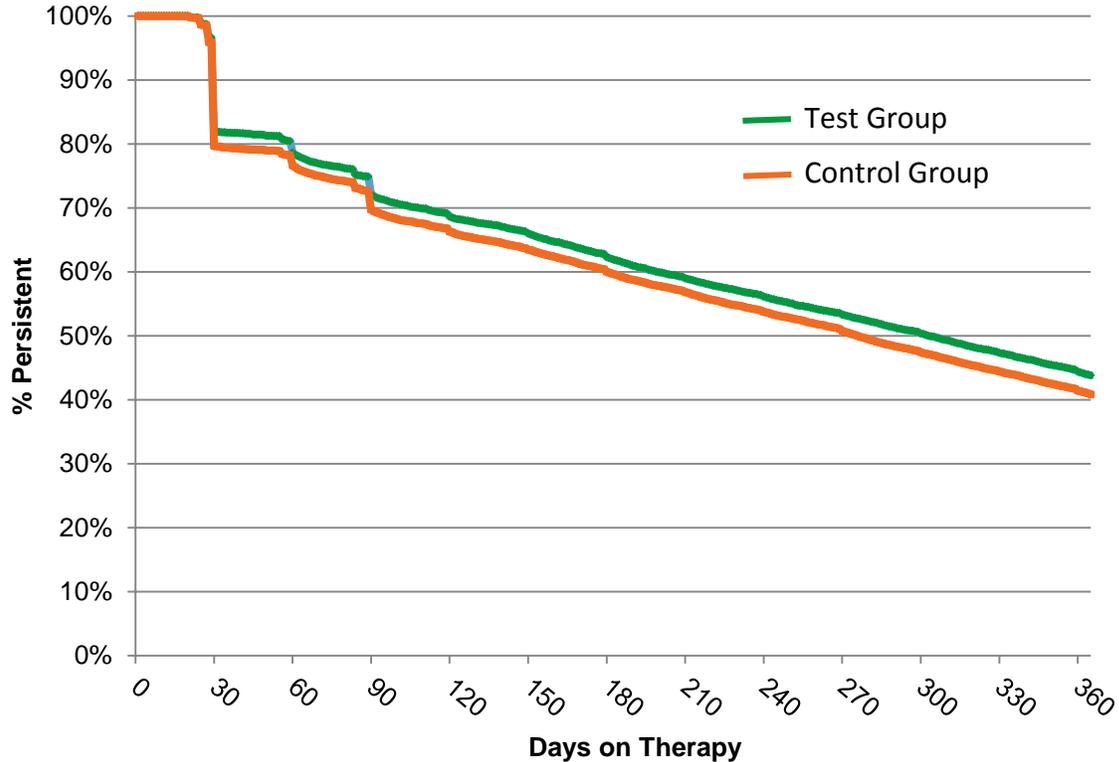


Figure 2. Percent of Patients on Therapy



CONCLUSIONS

- Patients receiving email refill reminders demonstrated better adherence and persistence to maintenance medications than patients who did not receive the reminders. For patients with chronic condition, greater medication adherence and persistence should lead to lower healthcare utilization and costs.

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