Abstract

Impact of AllazoEngine-Targeted Interventions on Medication Adherence: Repeated Measures Difference-in-Differences Analysis

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Abstract

Background: AllazoHealth utilizes predictive analytics to improve medication adherence by targeting patients whose behavior can be changed with intervention programs. The AllazoEngine utilizes Rx claims, previous intervention data, and demographics to predict future adherence, to prioritize the patients whose behaviors can be changed, and to select the intervention channel and messaging most effective for each individual patient. Blue Cross and Blue Shield of North Carolina commissioned AllazoHealth's predictive analytics and separately commissioned medication intervention delivery services for this adherence program.

Objective: This study aimed to evaluate the effectiveness of the AllazoEngine and targeted interventions to improve medication adherence.

Methods: This was a double-blind, randomized controlled trial (RCT) focused on RAS antagonists, oral anti-diabetics, and Statins. Patients were randomized to receive no intervention, traditional non-Allazo-targeted interventions, or interventions targeted by the AllazoEngine. All interventions consisted of live calls, direct mail to patients, and faxes to prescribers. Patients were defined as adherent in accordance with Medicare Star ratings methodology if their proportion of days covered (PDC) was greater than 80%. Patients' adherence status in 2015 was compared to their adherence status in 2016 after the intervention period. Difference-in-Differences (DiD) analysis was used to compare the effect of each intervention method. Statistical significance was set to 10%.

Results: The primary study population consisted of 14,377 controls, 5,423 traditional non-Allazo targeted-intervention patients and 24,527 Allazo targeted intervention patients. Patients had comparable characteristics at baseline and comparable decrease in medication adherence in the pre-intervention observation period across the intervention groups. Non-Allazo-targeted interventions did not statistically improve the likelihood of adherence. Patients who received Allazo-targeted interventions performed statistically better than both the non-Allazo targeted group and control group (P=.06 and .03). Assuming net positive uplift from non-Allazo interventions, Allazo interventions accounted for 7.7 times the per-patient uplift in adherence compared to non-Allazo interventions.

Conclusions: Due to the specific study design of not including new patients, adherence decreased in each intervention group over the intervention period. However, the decrease was significantly less for those in the Allazo group compared to both the non-Allazo and control groups.

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KEYWORDS

diabetes; medication adherence; star-ratings; hypertension; predictive analytics

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