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Real-Time Prescription Benefit Tool Availability and Prescription Medication Fill Rates

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NYU Grossman School of Medicine

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Abstract

Medication affordability contributes to prescription abandonment, but evidence on whether real-time prescription benefit (RTPB) tools improve fill rates remains limited. NYU Grossman School of Medicine, through a grant funded by the NCPDP Foundation, analyzed 38,289 prescription orders using a clustered randomized design. Findings indicate that RTPB use did not significantly affect overall fill rates. However, with RTPB tools in place, fill rates were higher for the highest-cost drug classes and among patients with the lowest income. These findings suggest RTPB tools may improve prescription access for patients facing greater cost burdens and help reduce income-related disparities.

Background

Medication adherence is a key component of a positive outcome yet 27% of Americans report abandoning their medication at the counter due to affordability (Marsh & Guttentag, 2025). Utilization of Real-Time Prescription Benefit (RTPB) transactions is estimated to have saved a collective $55 million for patients in 2025 with an average of about $77 per prescription (Surescripts, 2025). Research on the impact of RTPB to prescription fill rates is limited. Researchers at NYU Grossman School of Medicine utilized funding from the NCPDP Foundation to research this topic. This paper is a report of those results which were published by the researchers in a peer-reviewed journal (Ying, Padmanabhan, Szerencsy et al., 2026).

Research Objective & Design

Do real-time prescription benefit tools increase prescription fill rates?

Data utilized included in-house data from NYU Langone Health which was previously published. Researchers utilized a clustered design with 1:1 randomization and included both an intervention (with RTPB recommendations integrated) and control (without RTPB recommendations integrated). Savings limitations were implemented to reduce notification fatigue. These limitations were set at greater than $5 first-fill out-of-pocket savings and greater than $.10 per day for out-of-pocket alternative medication savings. Logistic regression models were utilized to examine the impact on medication fill rates with RTPB integrated.

Prescribers were notified of the ongoing RTPB implementation but were unaware of their placement in either the intervention or control groups. RTPB recommendations were visible to prescribers at the point of care, as the prescribers were submitting electronic prescription requests. These recommendations are unique to each patient and incorporate the patient's benefit factors (i.e. co-pays, deductibles).

Research Findings

The study included a total of 1,386,577 prescriptions, after removal of ineligible prescriptions, a total of 38,289 prescription orders were analyzed (Figure 1). A thorough comparison of the prescriptions was conducted; highlighted in this review is the insurance type due to the direct connection between insurance and patient

out-of-pocket costs. Medicare-insured patients accounted for 57.2% of the total group, with just .3% being insured with Medicaid, 38.6% were commercially insured and the remaining 3.9% fell into a generic other category, Figure 2 shows a comparison of the insurance type breakdowns amongst the Intervention Group (IG) and Control Group (CG).

Overall, no statistically significant observations were noted in fill rates in either the IG or CG. Insurance type did not statistically impact fill rates. Further analysis with a social determinants of health (SDOH) perspective revealed positive impacts on fill rates in two areas (Figure 3):

1. In highest-cost drug classes, the overall fill rates showed 14.5 percentage points (pp) in favor of the IG.
2. Patients with a median annual household income equal to or below $75,340 showed a 30.3 pp difference in favor of the IG.

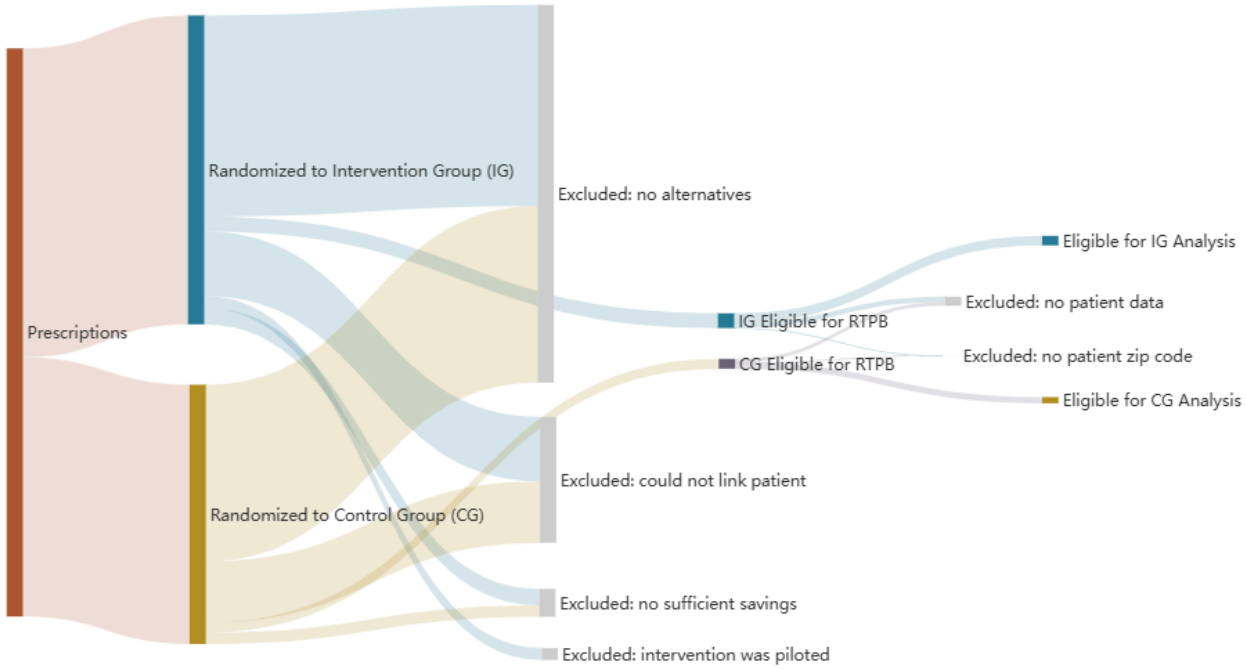
These findings may translate to improved adherence for high-cost drug classes, especially for patients with a household income below $75,340, showing that RTPB utilization may address income-related disparities. Additionally, RTPB is likely to have facilitated additional dialogue between patient and prescriber, strengthening that relationship and improving patient care. This is most likely to positively affect patients with SDOH factors, especially those with low-income.

Recommendations for Industry

A focus on implementation requirements at the policy level is recommended for wide industry adoption. RTPB, like other healthcare standards, is evolving. As this process continues, standards development professionals and organizations should consider how RTPB tools can better identify clinically appropriate and lower cost alternatives for high-cost drugs.

Figure 1

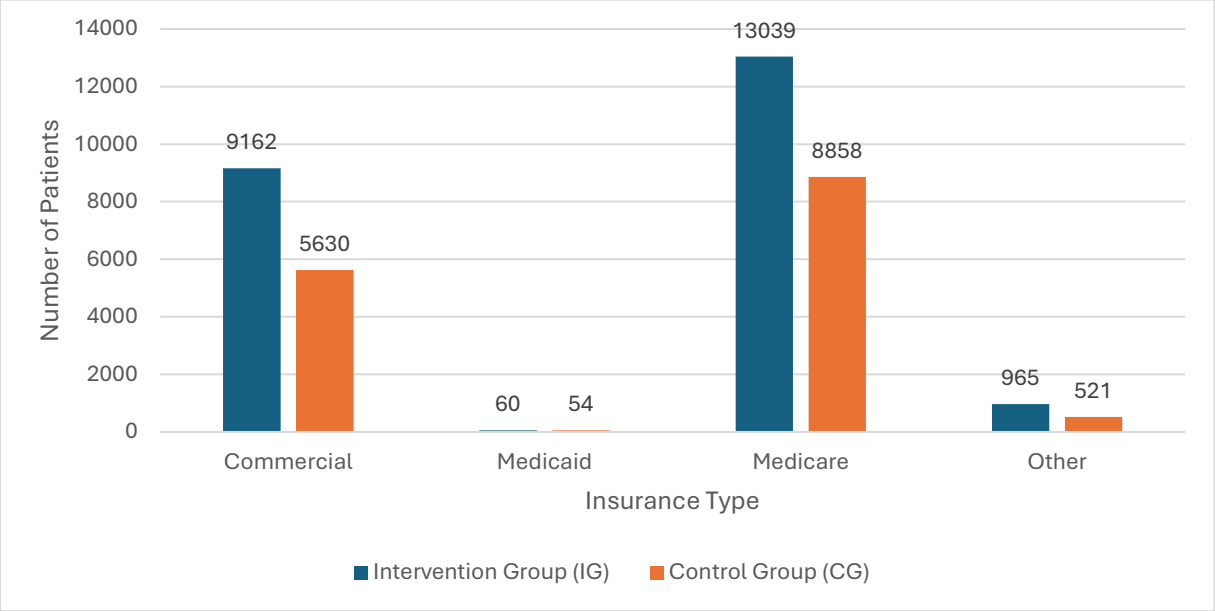
Prescription Eligibility for Intervention Group (IG) and Control Group (CG) Analysis



Note. Sankey chart depicting the movement of prescriptions within the NYU Langone Health system that were considered for analysis in this research.

Figure 2

Comparison of Insurance Types for Patients in the Intervention Group (IG) and Control Group (CG).



Note. Chart showing a comparison of insurance types for both the IG and CG.

Figure 3

RTPB impact on fill rates in two identified groups with the highest overall impact to fill rates.

Factor	IG fill rates	CG fill rates	Percentage points (pp)
Highest-cost drug classes, overall	49%	33%	14.5 pp
Highest-cost drug classes **plus** Median annual household income ≤$75,340	49%	27%	30.3 pp

Note. Basic chart showing the fill rates in IG and CG with the adjusted pp for two groups with the highest impact on fill rates.

Disclosures

Research was performed by the Grantee, NYU Grossman School of Medicine, was funded by the NCPDP Foundation, and was submitted and published in the JAMA Health Forum, Vol. 7, No. 8, by the Grantee.

NYU Grossman School of Medicine did not indicate whether AI was utilized in the drafting and writing of their report. This abridged results paper did not utilize AI.

References

Marsh, T. & Guttentag, S. (2025). *Nearly a third of Americans aren't filling their prescriptions because of high costs*. GoodRx. https://www.goodrx.com/healthcare-access/research/third-of-americans-dont-fill-prescriptions-due-to-cost

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