



**Research by Johns Hopkins Medicine Shows NCPDP's RTPB Standard  
Provides Accurate Point-of-Care Medication Cost Estimates  
That Lead to Patient Savings at the Pharmacy**

A Johns Hopkins Medicine Research Study has proven that patients can save on their medication costs -- and sometimes acquire medications in a more timely fashion -- when physicians and pharmacy industry technology partners implement NCPDP's Real-time Prescription Benefit (RTPB) Standard.

The research, funded through a grant from the NCPDP Foundation, first confirmed that the RTPB Standard delivers *accurate* out-of-pocket medication cost estimates – based on the individual patient's benefit plan – at the point of care. This provides a new level of cost transparency for both physicians and their patients. Physicians can trust the estimates, which empowers them to prescribe the lowest cost medication that is clinically appropriate. The Johns Hopkins research shows that when physicians chose an alternative medication for their patients, based on the point-of-care estimates, it resulted in cost savings for patients at the pharmacy.

During the six-month Johns Hopkins study period, physicians and other providers in the study placed 368,632 medication orders. A medication estimate was returned for 138,861 of those orders via an NCPDP RTPB transaction.

**For 98% of orders, the cost paid by the patient at the pharmacy was less than, the same or no more than 3 cents greater than the estimate returned by the RTPB transaction.**

**In a subset of 20,315 medication orders for which a medication estimate was returned via an RTPB transaction, providers chose an alternative medication for their patients for 1,572 of those orders.**

**The average out-of-pocket medication cost savings for the patient at the time of dispensing was \$21.40, with the highest cost savings at dispensing being more than \$1,000.**

**The average out-of-pocket cost-per-day savings to patients was \$1.09.**

**Alternative prescription decisions**

The researchers identified multiple types of changes to medication orders, in the outpatient setting, resulting from information provided to prescribers via the RTPB transaction. For example, a leading category of change centered on prior authorization requirements. The prior authorization process is time-consuming for physicians and it can lead to patients abandoning prescriptions. The RTPB transaction was able to prompt prescriber decisions to move from a medication requiring prior authorization to one that does not require it.

A common change made to drug coverage status was a switch from "covered with restrictions" to "covered," increasing the likelihood that patients can obtain their medications without delay. Also

common were changes in formulation, such as capsules to tablets or cream to ointment – changes of minimal clinical significance.

The research findings suggest that widespread adoption of the RTPB Standard can help reduce abandonment of prescriptions and increase adherence to medication therapies – both of which are affected by medication cost and speed to therapy.

### **Positive feedback from prescribers**

Feedback from prescribers in the initial months after implementing the RTPB transaction was positive, and confidence in the tool has grown since the research demonstrated the accuracy of the cost estimates provided at point-of-care. The most consistent feedback from physicians in the study is that they want to receive point-of-care cost estimates for all their patients. It's not possible yet due to the need for more industry-wide adoption of the transaction.

This Johns Hopkins research is one of multiple examples of research funded by the NCPDP Foundation. The Foundation's research priorities align with patient safety issues and healthcare challenges that can be overcome with the proper use of new or underused NCPDP standards.

Further details on the study are available in the Johns Hopkins Medicine researchers' [final report on the study](#).