BERKELEY CENTER FOR HEALTH TECHNOLOGY

Issue Brief

Reference Pricing, Consumer Cost-Sharing, and Insurer Spending for Pharmaceuticals

by James C. Robinson, Christopher M. Whaley, and Timothy T. Brown

The findings reported in this issue brief are derived from one of a series of studies on the impact of reference pricing, conducted at the UC Berkeley Center for Health Technology (BCHT). Data for these studies were obtained from three large self-insured employers or employer associations: the California Public Employees Retirement System (CalPERS), Safeway, and the RETA Trust.

All studies compare changes in consumer choice and provider prices before and after implementation of reference pricing, and compare these changes to the choices made by comparable employed groups not subject to reference pricing. This research method is referred to as 'difference-in-differences' multivariate statistical analysis. Comparison group data were obtained from health insurance provider Anthem and pharmacy benefit manager Envision Rx. Full information on the reference pricing studies can be obtained from the BCHT website, bcht.berkeley.edu.

Methods

In July of 2013, the RETA Trust, a national association of 55 Catholic organizations that purchases health insurance for their employees, implemented reference pricing for 1,302 outpatient drugs, representing 78 therapeutic classes, as a part of an effort to sensitize enrollees to the cost of the care they use. Prior to implementation, RETA had used a tiered pharmaceutical formulary, requiring a $10 copayment for generics and a range of copayments and coinsurance levels for branded drugs.

Under the RETA reference price initiative, drugs were grouped into therapeutic classes as defined by the American Hospital Formulary Service Pharmacologic-Therapeutic Classification System. Reference pricing was only applied to therapeutic classes with wide price variation. Therapeutic classes with complex and expensive specialty drugs were excluded. The RETA initiative was designed by the consulting firm RxTE, formerly Safeway Health.

Following implementation, patients using drugs that cost more than the reference price were notified of lower-priced alternatives and encouraged to discuss these alternatives with their physicians. If a physician indicated an enrollee was unable to switch to the reference drug for clinical reasons, an exemption from reference pricing was granted.

The Problem: Variation in Drug Prices

In the United States, prices charged for therapeutically similar drugs vary widely. For example, the median price paid by the RETA Trust for drugs within 78 therapeutic classes varied by $222 for a month's prescription.

Employers and insurers currently obtain price discounts and rebates by implementing tiered formularies, which link the consumer's cost sharing obligation to the price of each drug. In tiered formularies, generic drugs are often subject to a lower copayment than branded drugs, which are, in turn, subject to a lower copayment than specialty drugs.

However, tiered formularies have become less effective over time because the cost sharing levels do not account for price variation and increases within each tier. Patients are incentivized to select a drug from a low copayment tier, but not to select a low-price drug from within a tier or to switch their selection after the price of a drug increases. For RETA, the share of prescriptions for the lowest priced drug in each therapeutic class was only 6.8 percent, highlighting the limitations of traditional tiered formulary strategy.

A partial solution: reference pricing

Reference pricing is an insurance benefit design that encourages patients to favor cheaper procedures and products over more expensive alternatives. It has been used for surgical and diagnostic procedures and for imaging and laboratory tests. Some countries outside the United States use reference pricing as a means to moderate drug spending. Under reference pricing, drugs are grouped by therapeutic class, and the employer or insurer limits its payment to the price of the cheapest, or one of the cheapest, drugs in each class. Patients using a drug that costs more than the price of the reference drug are responsible for paying the difference in price.

Findings

Change in Prescription Trends

Prior to implementation of reference pricing, the use of low priced drugs within each therapeutic class was rising for both RETA and the labor union trust. Between July 2010 and July 2013, for example, the share of prescriptions for low-priced drugs increased from 59.5% to 62.4% for RETA and from 64.1% to 66.1% for the labor union trust.

Data & Analysis

Pharmacy claims data, including drug identifier, price paid and patient demographics, were obtained for the BCHT study from the RETA Trust. For comparison, similar claims data were obtained for a labor union health benefits trust managed by the Pharmacy Benefit Management (PBM) firm EnvisionRx. Both data sets extended from July 1, 2010 through December 31, 2014. Data included the National Drug Code, formulation, dose and days of treatment. Price data included the allowed charge and patient cost sharing amount.

The outcomes of interest were the probability that a prescription was made for the low-price (reference) drug within its therapeutic class; the price paid for a prescription; and the consumer's cost sharing payment. Multivariate difference-in-difference regression methods were used to analyze the association between implementation of reference pricing and changes in each of the three outcomes.

Figure 1

Percent of Prescriptions Made for Low Price Drugs within Therapeutic Classes, Before and After Reference Pricing

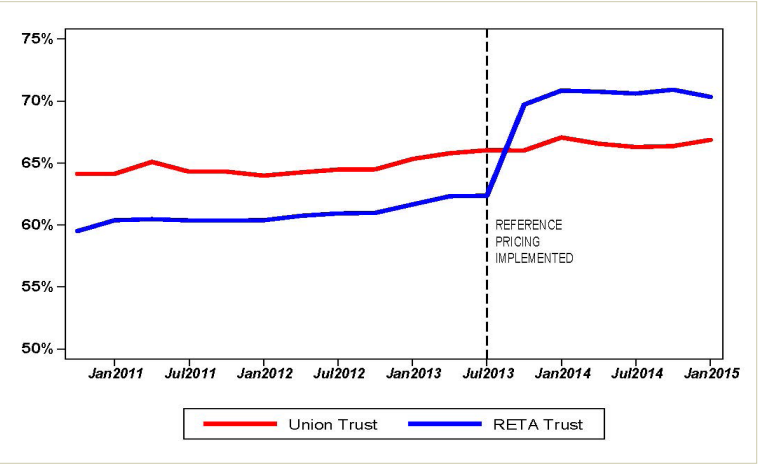
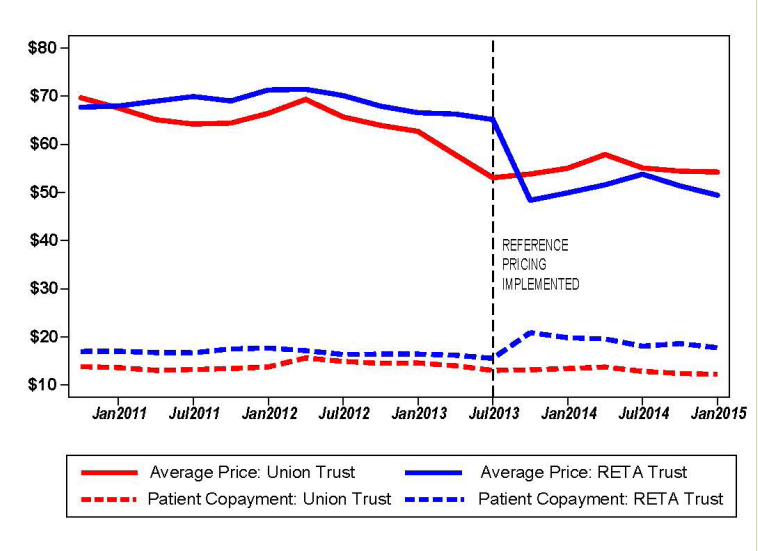


Figure 2

Price and Consumer Cost Sharing per 30-Day Drug Prescription, Before and After Implementation of Reference Pricing



However, as shown in ***Figure 1***, after implementation of reference pricing, use of low-priced drugs increased again for RETA. In the first quarter after implementation, low-priced reference drug use rose to 69.7% for RETA and then stabilized. There was no significant change for the labor union trust.

Decrease in Price Paid

Prior to the implementation of reference pricing, the RETA trust paid an average of 10.6% more per prescription than did the union trust comparison group. As ***Figure 2*** shows, the average price paid by RETA decreased by 13.9% following implementation, equivalent to a reduction of $9.24 per monthly prescription. There was no change in prices paid by the comparison group.

Increase in Consumer Cost Sharing

Prior to implementation of reference pricing, RETA enrollees paid an average of 30.9% more in cost sharing per prescription than did enrollees in the labor union trust, a reflection of the generous benefits negotiated by the union. The implementation of reference pricing was associated with 5.2% increase in consumer cost sharing for RETA enrollees, with no change observed for patients covered by the union trust.

Conclusion

Reference pricing can address recent spikes in drug expenditure by influencing patient choice and prices paid by insurers and employers. For RETA, incentivizing patients to choose cheaper therapeutically similar drugs decreased spending by $1.34 million.

It should be emphasized that reference pricing cannot address all of the challenges facing the pharmaceutical system. It targets drug price, rather than utilization or health outcomes. The findings of this research are limited to non-specialty drugs for one alliance of private employers. Nevertheless, as the United States searches for means to reduce spending on drugs in ways that do not affect incentives for pharmaceutical research, reference pricing that targets high prices for non-novel drugs is one attractive possibility.

Robinson JC, Whaley C, Brown TT, Association of Reference Pricing with Drug Selection and Spending, New England Journal of Medicine 2017; in press.

JAMES C. ROBINSON is the Leonard D. Schaeffer Professor of Health Economics and Director of the Berkeley Center for Health Technology (BCHT) at the University of California, Berkeley. **CHRISTOPHER M. WHALEY** is Associate Policy Researcher at RAND, and Adjunct Professor of Health Economics at the UCB School of Public Health. **TIMOTHY T. BROWN** is Associate Professor of Health Economics, and BCHT Director of Research at UCB.

BCHT

BERKELEY CENTER
FOR HEALTH TECHNOLOGY

The **BERKELEY CENTER FOR HEALTH TECHNOLOGY** (BCHT) conducts research into existing and improved criteria for coverage, consumer cost-sharing, and other dimensions of management for biomedical innovations. BCHT also provides academic programs for UC Berkeley graduate students and professional development for health care organizations whose senior staff would benefit from deeper understanding of the innovation, coverage, and reimbursement environment.