



BERKELEY CENTER
FOR HEALTH TECHNOLOGY

Reference Pricing in Insurance Design: Surgery, Diagnostics, Drugs

James C. Robinson

Leonard D. Schaeffer Professor of Health Economics

Director, Berkeley Center for Health Technology

University of California



Overview

Impact of Reference Pricing

- Market dynamics
- Surgical and diagnostic procedures
 - Outpatient drugs



“Geez Louise—I left the price tag on.”

Price Variation in Health Care

- In health care, variation in price is in part due to factors on the 'supply side':
 - Manufacturers: patents and exclusivity
 - Providers: market consolidation
- The variation in price is facilitated by factors on the 'demand side'
 - Consumers lack incentive to shop, as someone else is paying (insurer, employer)
 - Consumers lack information on prices and quality at the time of making choice



What is Reference Pricing?

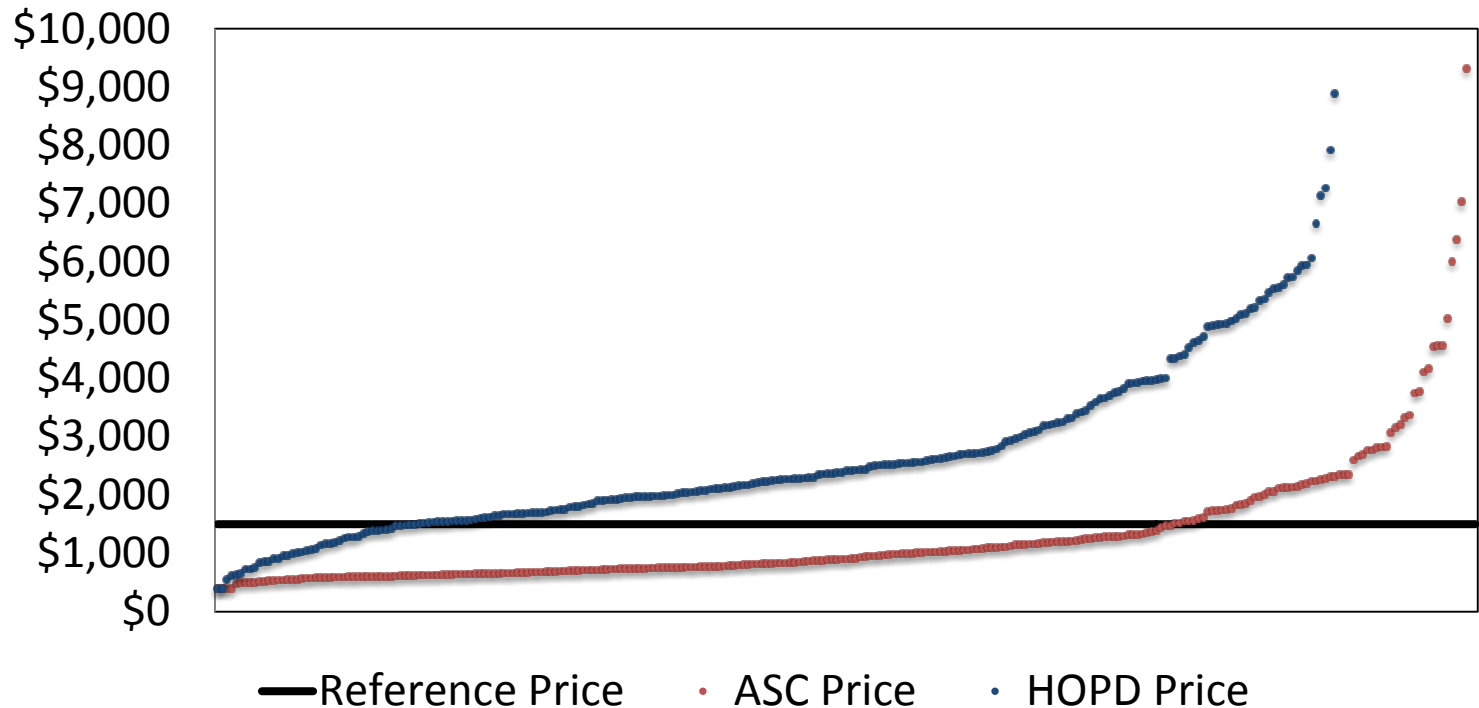
- Sponsor (employer, insurer) establishes a **maximum contribution** (reference price) it will make towards paying for a particular service or product
 - This limit is set at some point along the observed price range (e.g., minimum, median)
 - Patient must *pay the full difference* between this limit and the actual price charged
 - Patient may reduce cost sharing by switching to low-priced product or provider
- Patient chooses his/her cost sharing by choosing his/her product or provider
 - Patient has good coverage for low priced options but **full responsibility for choice**



Reference Pricing for Surgical and Diagnostic Procedures



Variation in Colonoscopy Prices



Market Dynamics: Procedures

1. Hospitals merge into chains
2. Hospital chains acquire ambulatory infusion, diagnostic, and surgery facilities and physician practices
3. Hospital systems increase prices
4. Payers respond through narrow network designs and consolidation
5. Hospitals and physicians consolidate even more and increase prices
6. Guess what happens next?



Reference Pricing for Ambulatory Procedures at CalPERS

- In 2011 CalPERS expanded reference pricing to ambulatory procedures, with intent of convincing beneficiaries to select lower-price ambulatory surgery centers (ASC) over hospital outpatient departments (HOPD)
- Reference price was set for HOPD at average price for ASC

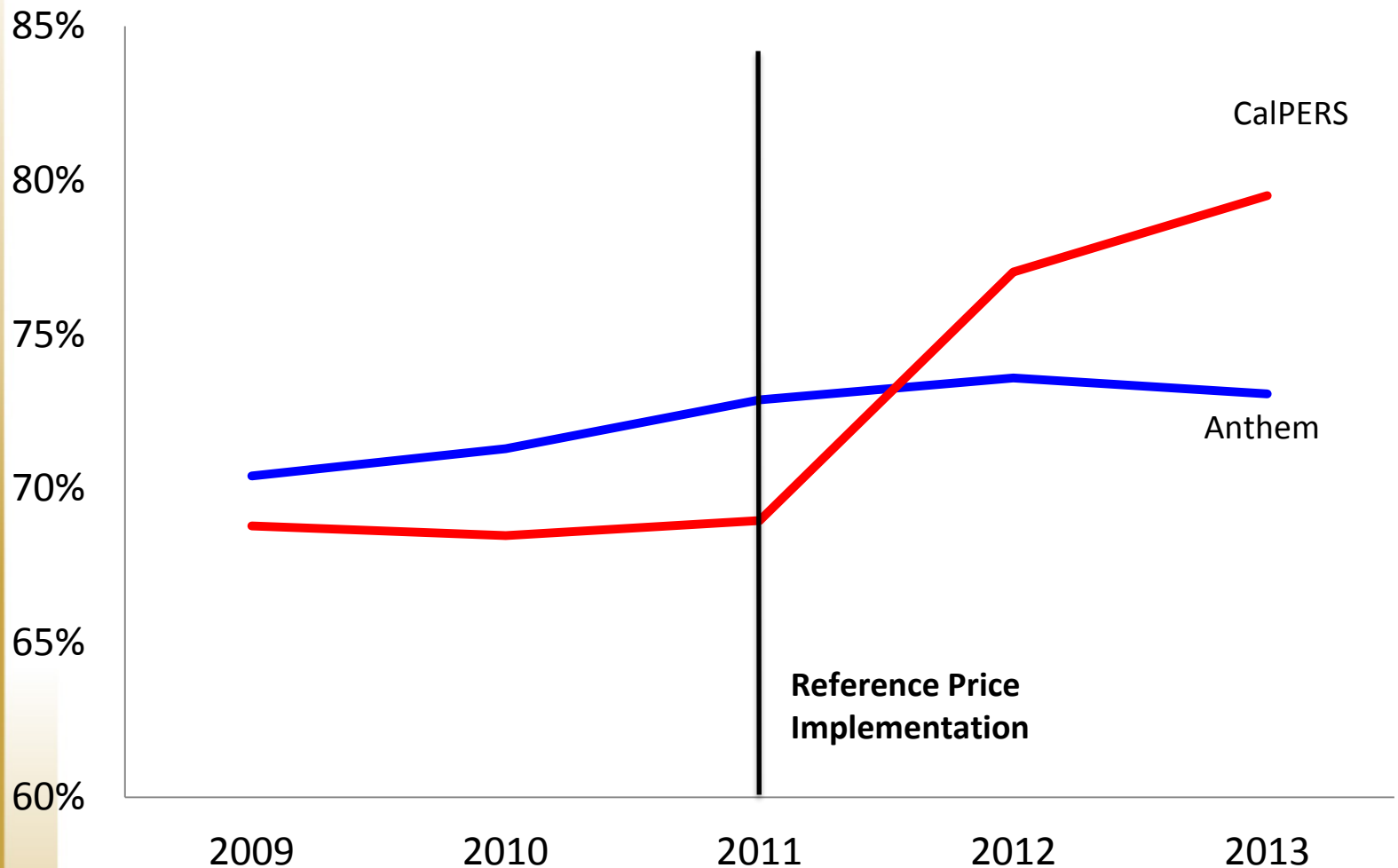


Multivariable Statistical Analysis

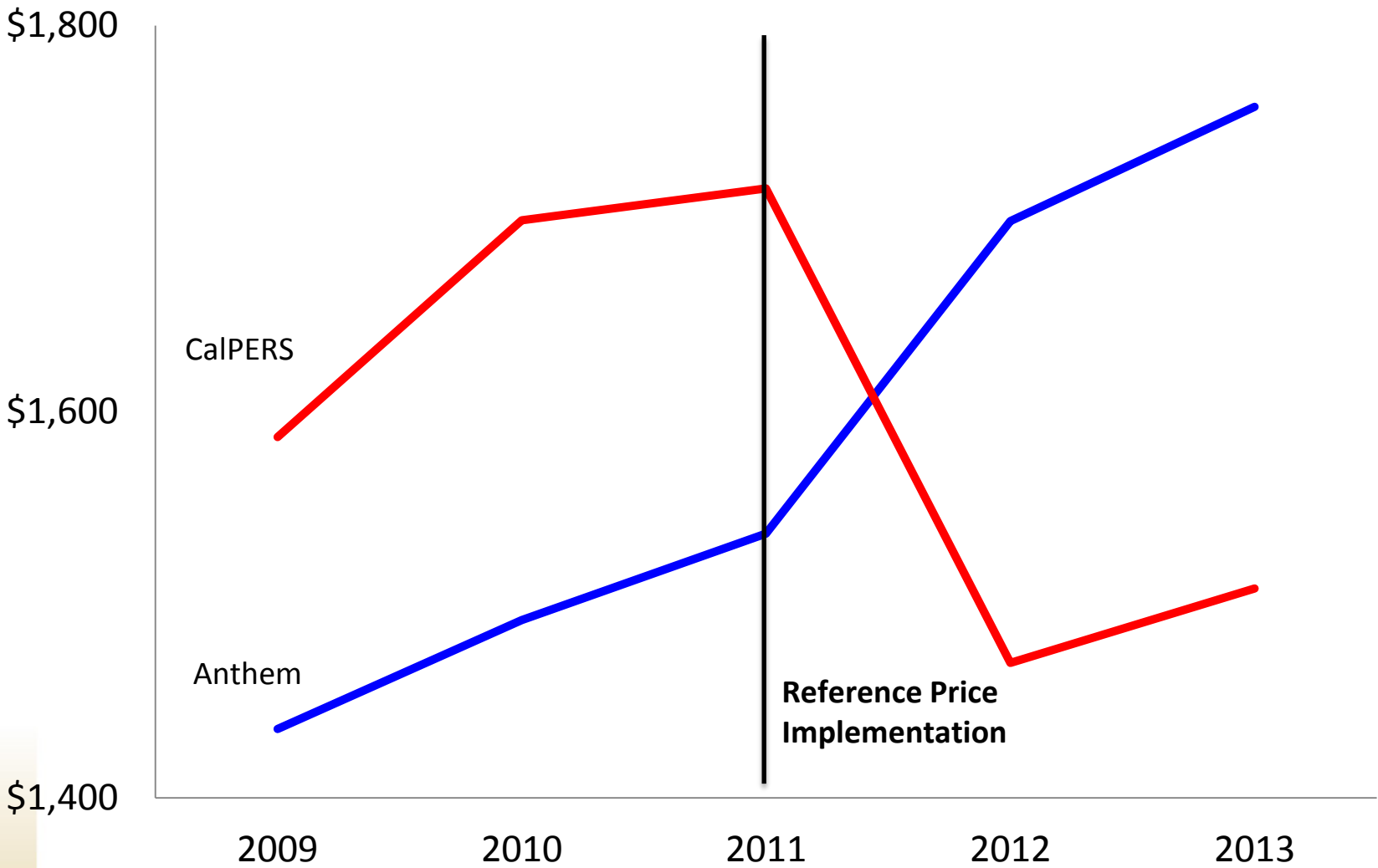
- Insurance claims for colonoscopy procedures from 2009 to 2014 were obtained from CalPERS (N=35,195) and comparison group Anthem Blue Cross (N=258,616)
- Multivariable (difference-in-difference) analyses:
 - 18 percentage point growth in probability that patient selects a (low-priced) non-hospital clinic
 - 21% reduction in average price paid
 - No change in surgical complications
- JC Robinson et al. Association of Reference Payment for Colonoscopy with Consumer Choices, Insurer Spending, and Procedural Complications. JAMA Internal Medicine 2015; 175(11):1783-91.



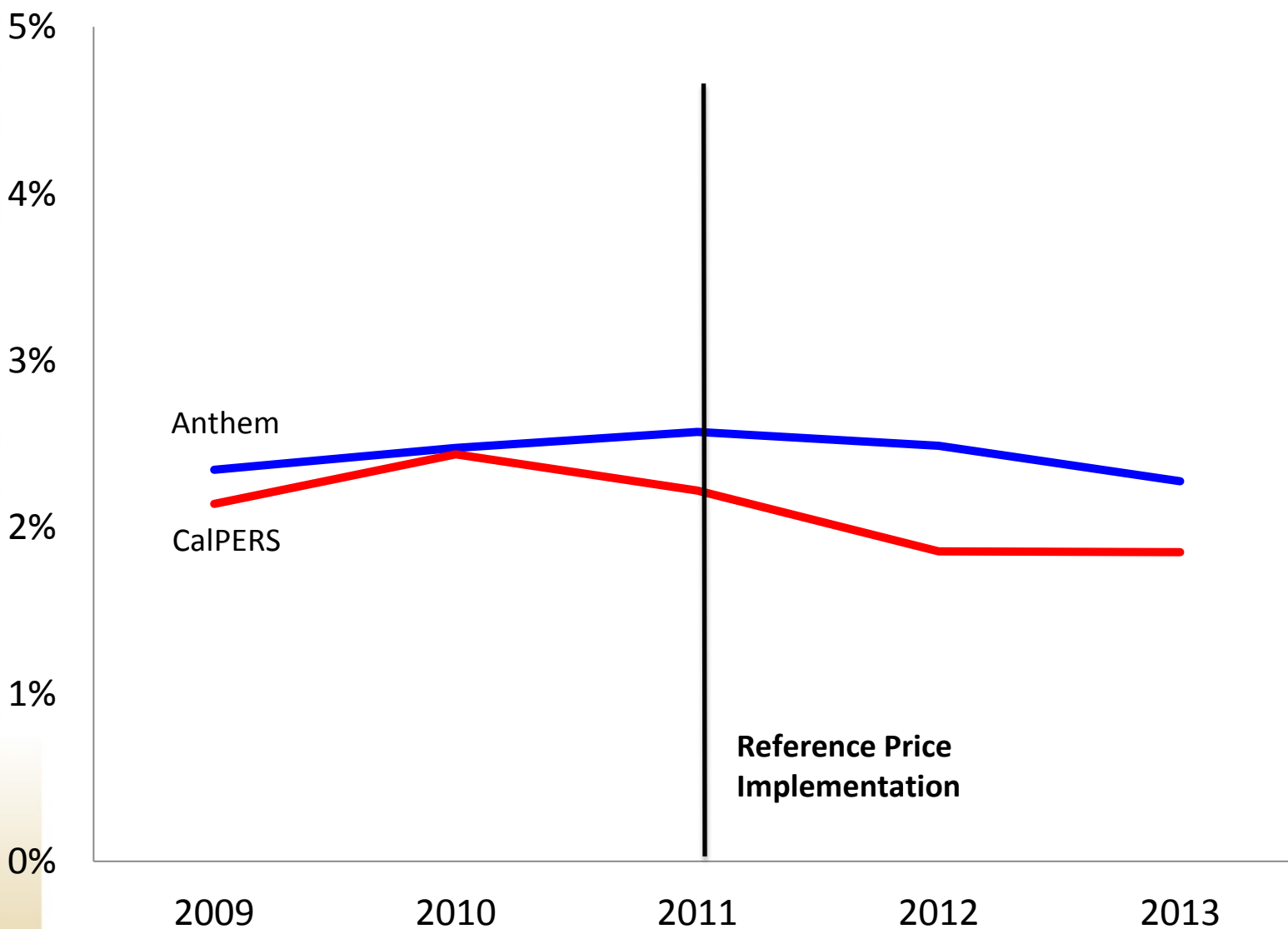
Percentage of Colonoscopy Patients Choosing ASC over HOPD before and after Implementation of Reference Pricing



Average Price (Allowed Charge) for Colonoscopy Before and After Implementation of Reference Pricing

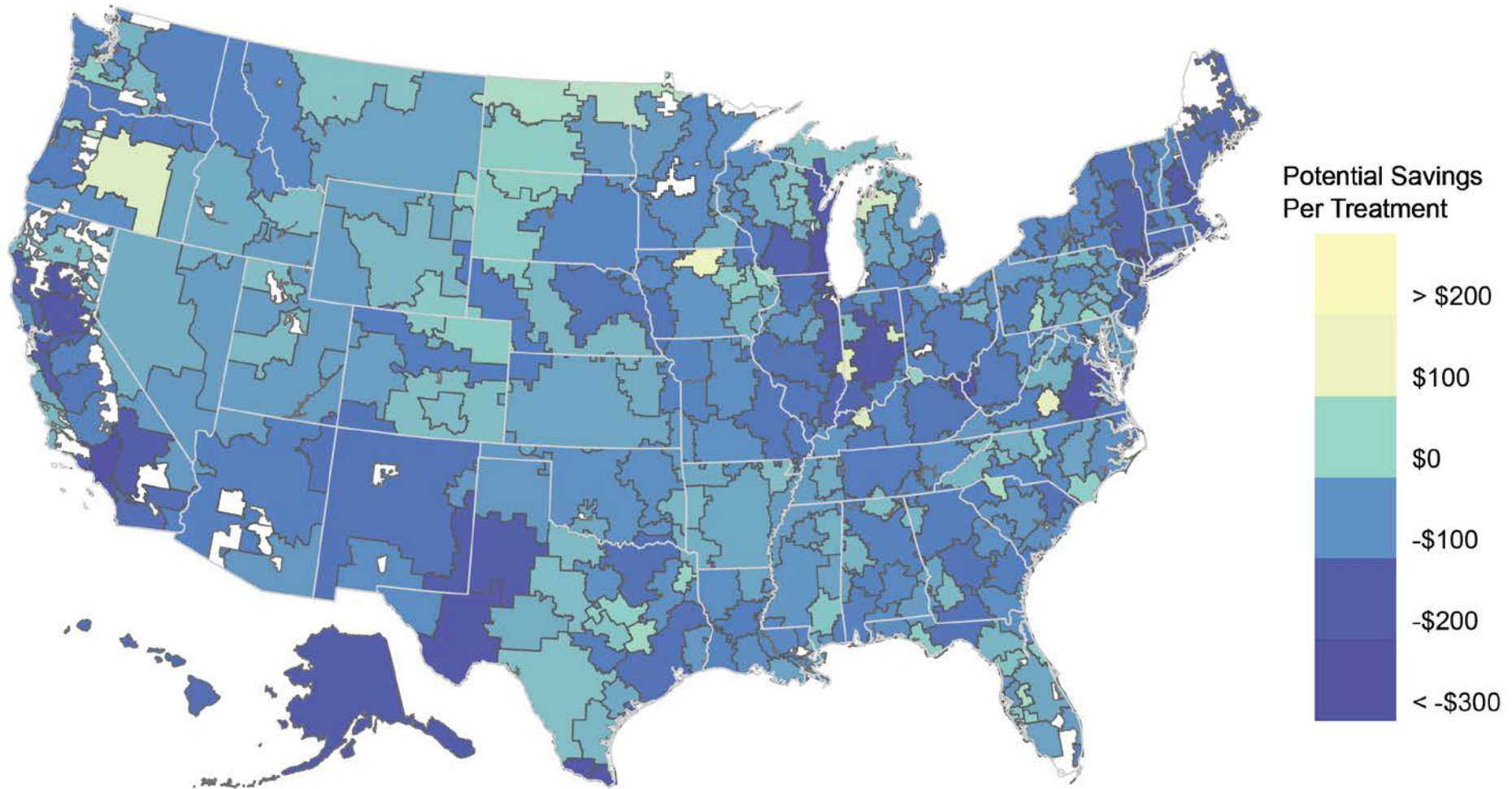


Surgical Complications for Colonoscopy Before And After Implementation of Reference Pricing



Potential Impact is Greater in Markets with High Variance in Prices

Potential Savings from Reference Pricing for Colonoscopy Procedures by HRR



Reference Pricing for Ambulatory Drugs



- Wide variation in drug prices
- RETA Trust implemented reference pricing for 76 non-specialty drug classes, capping payment at price of least-cost drug in class
- Patients were exempted if their MD provided clinical justification for more expensive drug



Market Dynamics: Drugs

1. Payers create formularies with drugs assigned to copayment 'tiers' based on price and willingness to offer rebates
2. Manufacturers respond by offering copay cards, financed by higher prices
3. Payers increase cost sharing from copays to coinsurance & deductibles
4. Manufacturers offer physician and patient support programs & raise prices
5. Payers tighten prior auth and step edits
6. Manufacturers create MD practice support programs & raise prices
7. Guess what happens next?



Drug Price Variation within Therapeutic Classes

Drug Class	Number of Fills	Price of Lowest-Priced Drug in Class	Price of Highest Priced-Drug in Class	Difference Between Highest and Lowest Price Drug (\$)	Share of Lowest Price Drug in Class (%)	Share of Highest Price Drug in Class (%)
HMG CoA Reductase Inhibitors	11,701	\$12.3	\$447.2	\$434.9	0.3%	0.0%
Thyroid Hormones	8,386	\$5.3	\$33.4	\$28.1	0.3%	0.1%
Selective Serotonin Reuptake Inhibitors (SSRIs)	7,287	\$10.3	\$201.0	\$190.7	10.2%	0.1%
ACE Inhibitors	6,601	\$5.9	\$50.4	\$44.5	2.0%	0.1%
Beta Blockers Cardio-Selective	5,490	\$6.1	\$78.0	\$71.9	6.1%	3.9%
Proton Pump Inhibitors	5,345	\$25.7	\$296.1	\$270.4	28.7%	0.5%
Biguanides	4,185	\$11.8	\$525.2	\$513.4	41.0%	0.8%
Hydrocodone Combinations	4,073	\$27.8	\$297.4	\$269.6	7.7%	1.4%
Nonsteroidal Anti-inflammatory Agents (NSAIDs)	4,021	\$9.9	\$521.0	\$511.1	12.3%	0.1%
Calcium Channel Blockers	3,864	\$14.6	\$221.8	\$207.2	3.2%	0.4%
Angiotensin II Receptor Antagonists	3,497	\$11.5	\$166.6	\$155.1	8.6%	0.4%
Benzodiazepines	3,286	\$3.0	\$15.1	\$12.1	0.1%	7.8%
Anticonvulsants - Misc.	3,224	\$17.9	\$292.2	\$274.3	0.2%	0.5%
Nasal Steroids	2,952	\$34.0	\$422.1	\$388.1	60.8%	0.3%
Thiazides and Thiazide-Like Diuretics	2,647	\$4.1	\$69.4	\$65.3	0.3%	0.2%
Serotonin-Norepinephrine Reuptake Inhibitors (SNRIs)	2,644	\$41.5	\$299.7	\$258.2	17.7%	2.6%
Beta Adrenergics	2,379	\$8.0	\$489.4	\$481.3	0.2%	0.0%
Non-Benzodiazepine - GABA-Receptor Modulators	2,233	\$34.3	\$221.4	\$187.1	12.6%	0.1%
Human Insulin	2,070	\$108.9	\$323.2	\$214.3	2.8%	16.0%
Angiotensin II Receptor Antag & Thiazide/Thiazide-Like	1,987	\$16.0	\$139.5	\$123.5	14.0%	6.2%
Antidepressants - Misc.	1,896	\$28.0	\$97.4	\$69.4	2.5%	37.1%

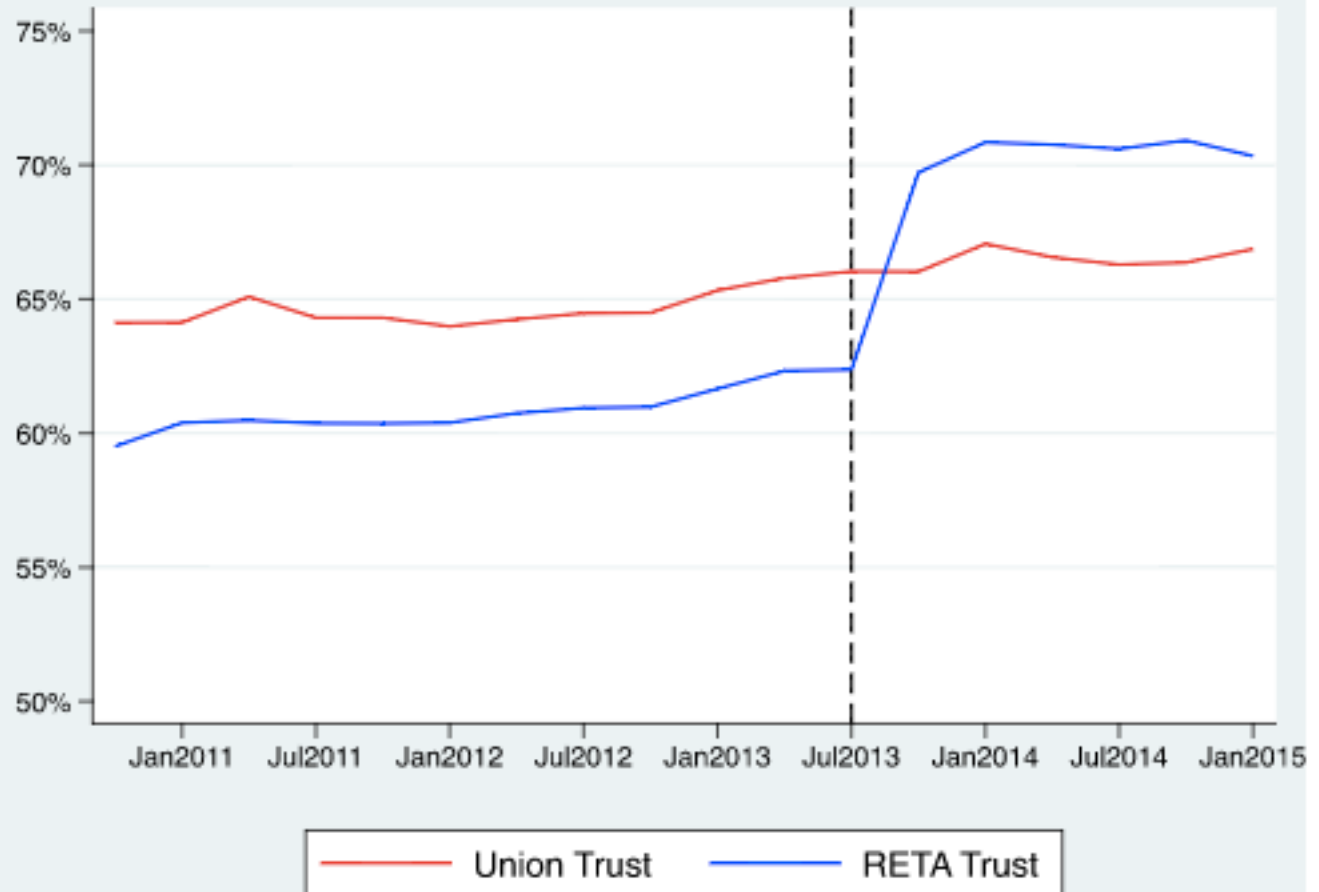


Multivariable Statistical Analysis

- Drug claims from 2010 to 2014 were obtained from private employer alliance (N=573,456) and from comparison labor union (N=549,285)
- Multivariable (difference-in-difference) analyses:
 - 11.3% growth in probability that a patient selects the low-priced drug within its class
 - 13.9% reduction in average price paid
 - 5.2% increase in employee cost sharing
- JC Robinson et al. Association of Reference Pricing with Drug Selection and Spending. New England Journal of Medicine 2017;377:658-75

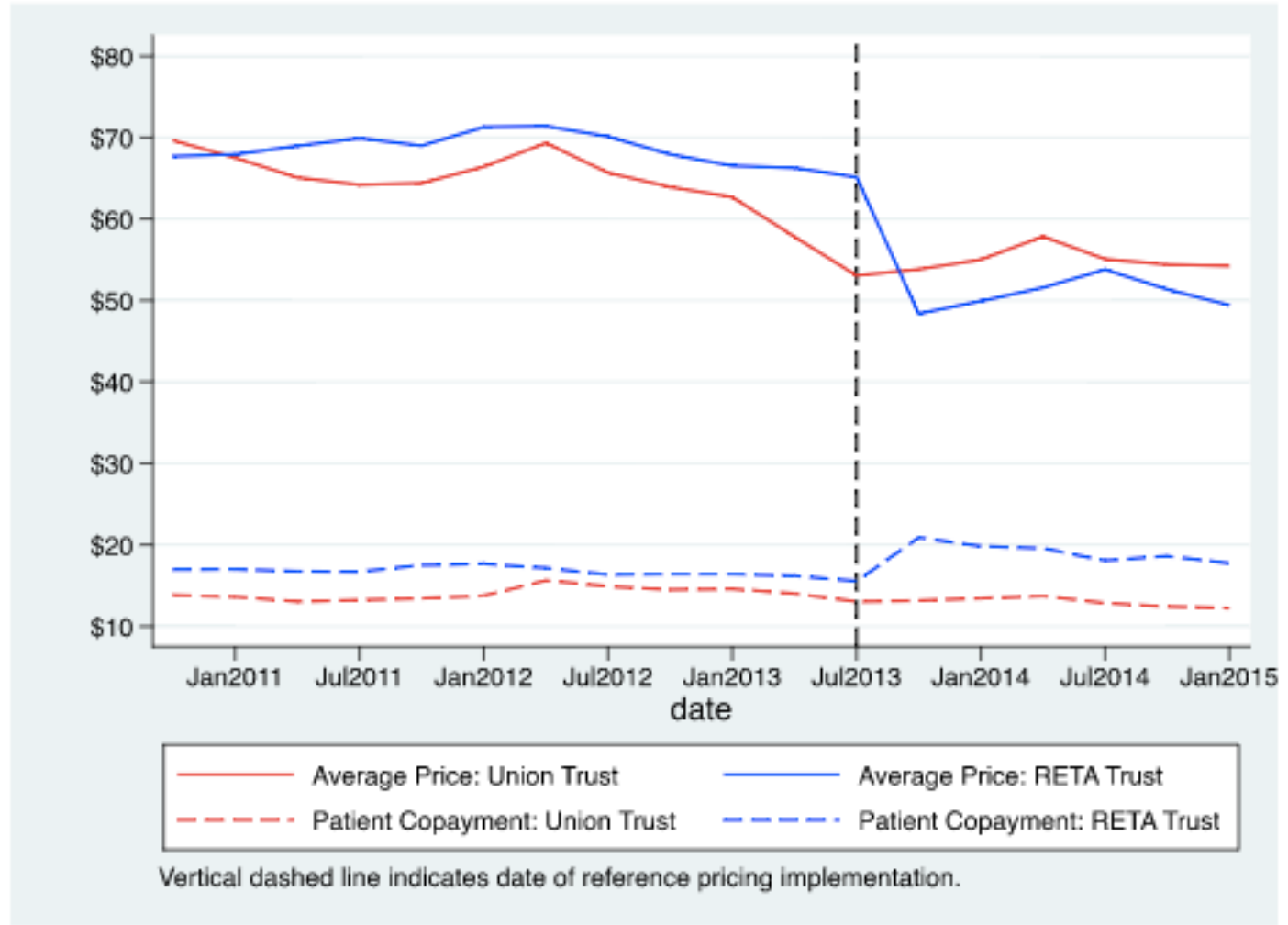


Impact of Reference Pricing: Increased Share for Low-Price Drug with Each Class



Vertical dashed line indicates date of reference pricing implementation.

Impact of Reference Pricing: Reduced Prices Paid and Increased Consumer Cost Sharing

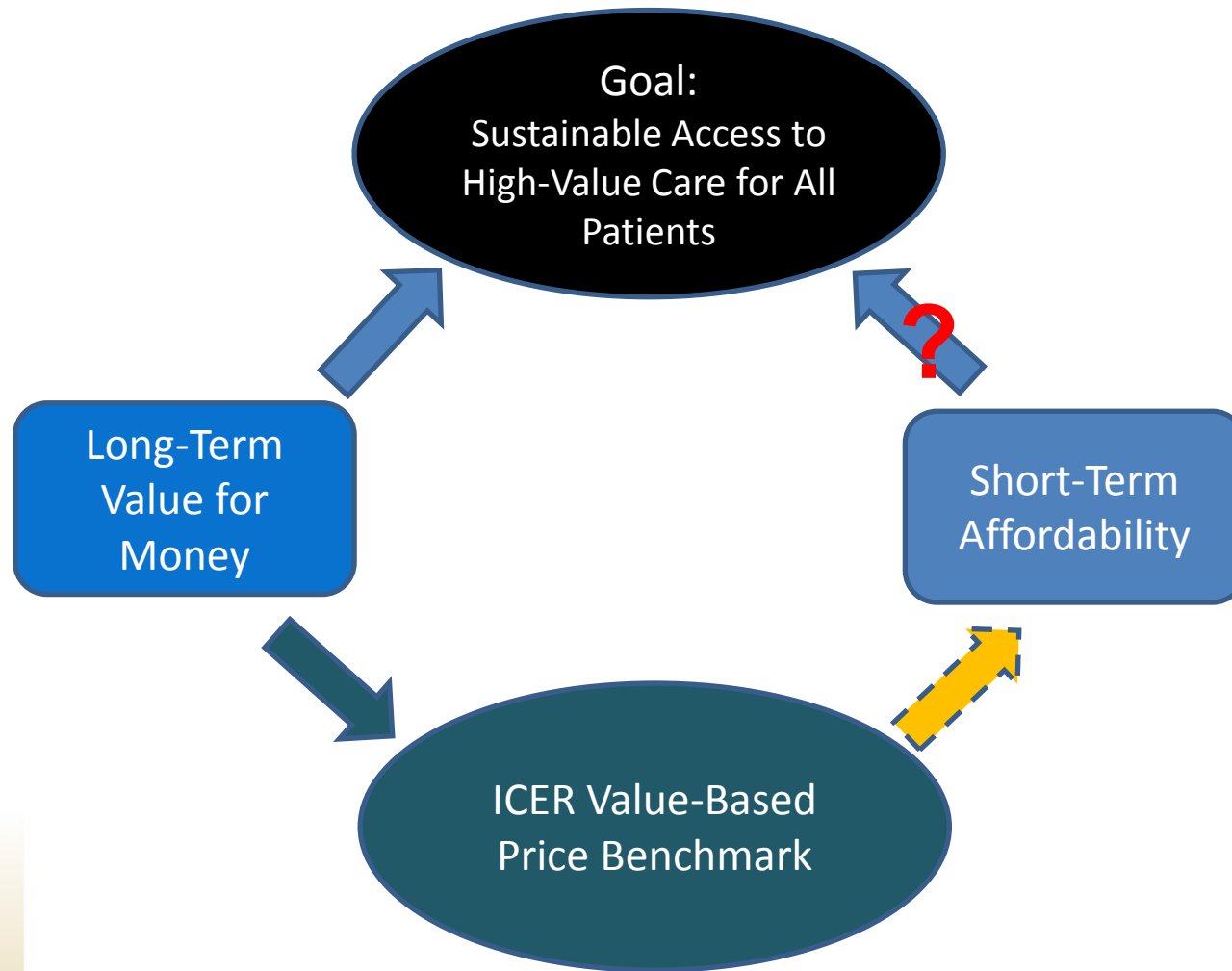


Can Reference Pricing Be Applied to Specialty Drugs?

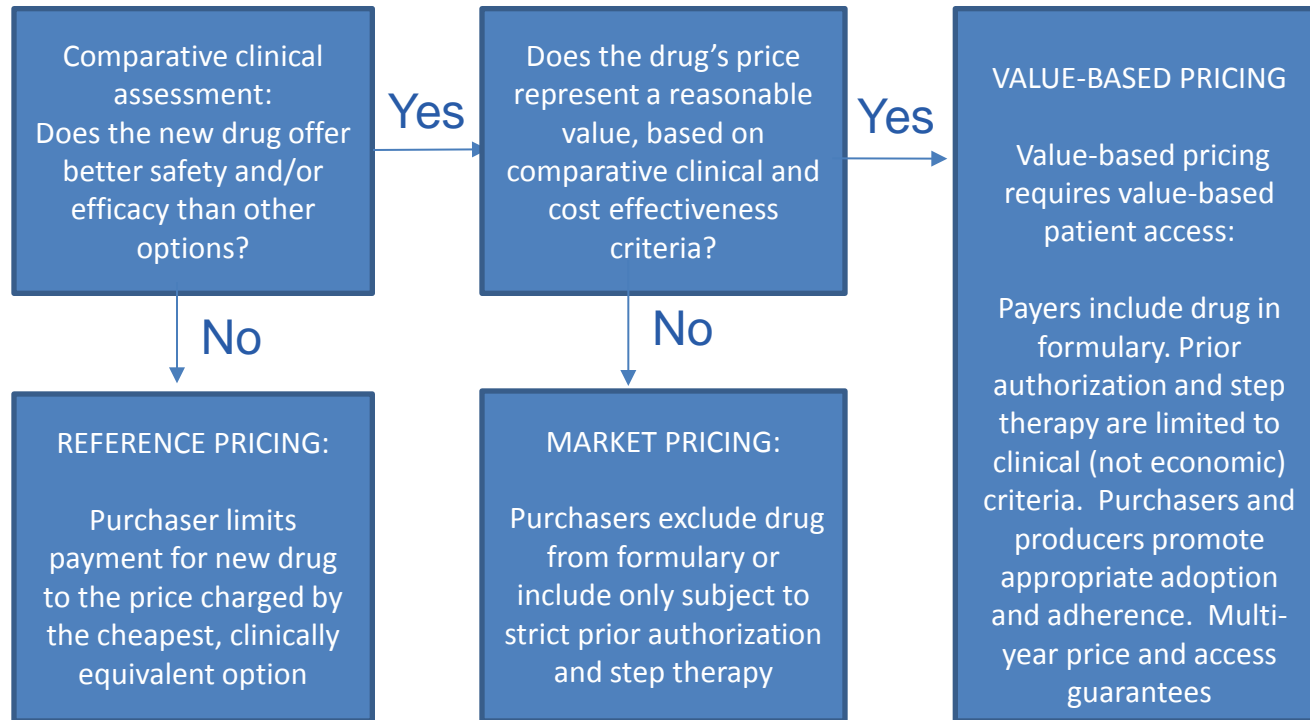
- Much of the price increases and variability have been for specialty drugs, which are more complex and expensive than traditional medications
- There is great potential for price competition among specialty drugs: innovation is producing large numbers of therapeutic equivalents
- However, specialty drugs differ amongst themselves in efficacy, toxicity, mode of administration
- To be effective, reference pricing will need to incorporate comparative effectiveness analysis.
- A better term would be 'value-based pricing'
- One potential source: Institute for Clinical and Economic Review (ICER)



ICER value-based price benchmarks



Value-based Drug Pricing and Patient Access





BCHT

BERKELEY CENTER
FOR HEALTH TECHNOLOGY

Explore more at our website:

bcht.berkeley.edu



Reference Pricing

What is Reference Pricing? How does it work? Does it generate savings? Explore pilot program results for Diagnostic Tests, Surgery, and Pharmaceuticals.