Evidence

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OVERVIEW

Background

Evaluating Effects

Evidence

Study

Evidence in Progress

Desirable Evidence

Value-Based Insurance Design

The premise of Value Based Insurance Design is to align patients' out-of-pocket costs, such as copayments and deductibles, with the value of health services.

Fendrick et al. AJMC. 2001; 7(9): 861-867.

RAND HEALTH INSURANCE EXPERIMENT

- 6 Cities: Seattle, WA; Dayton, OH; Charleston, SC: Fitchburg-Leominster, MA; Franklin County, MA; Georgetown County, SC
- Fee-for-Service Plans:
  - Free (0% coinsurance)
  - Three coinsurance groups: 25% coinsurance/50% coinsurance/95% coinsurance
  - Outpatient individual deductible
- Maximum Dollar Expenditure per year
  - 5, 10 or 15 percent of income
  - No more than $1,000 USD (average income was around $10K USD)

Manning et al. Health Insurance and the Demand for Medical Care. 1988. Santa Monica, CA : The Rand Corporation.

RAND HEALTH INSURANCE EXPERIMENT

No selection of health plan

Assigned to health plan

- Balanced characteristics of groups assigned to health plan options
- Random sample from cities

Findings

- “The data from the HIE clearly show that the use of medical services responds to changes in the amount paid out of pocket.” p. ix.

ELASTICITY

$$\text{Price elasticity of demand} = \frac{\%\ \text{change in quantity}}{\%\ \text{change in price}}$$

Evaluating Effects

Cost-Sharing → **Adherence** → **Outcomes**

Cost
Utilization
Adherence
Productivity
Outcomes

THE EVIDENCE

Strength/Intensity of the Intervention

- Include brand and/or generic medications
- Amount of reduction in cost-sharing
- Percentage reduction in cost-sharing
- Qualification for reduction in cost-sharing (e.g., Disease-specific, incentive?)

Comparison group

- Internal/external
- Assignment to intervention/comparison group
  - Randomization, matching

THE EVIDENCE

Time
- Length of time studied
- Timing of the effect: immediate, gradual, after the intervention?

Size of groups

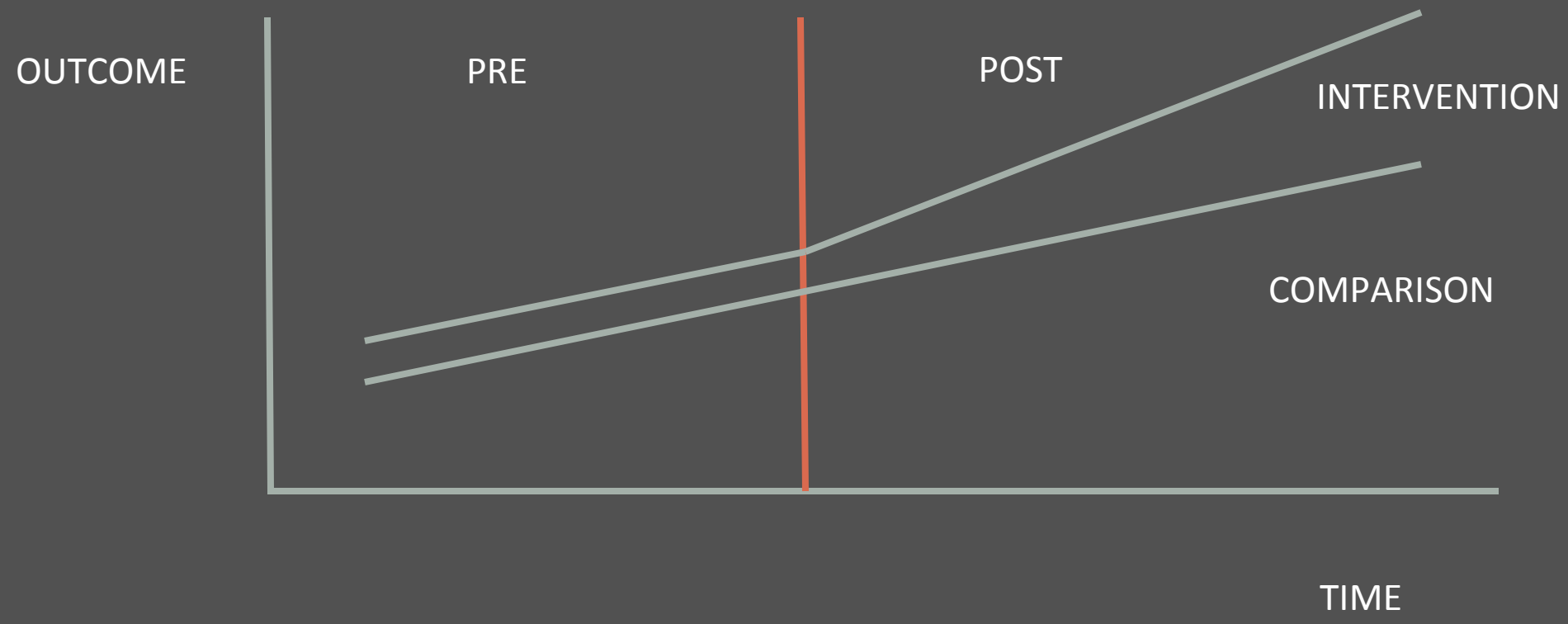
Outcomes/Measures

Methods of Comparison

Concurrent Changes

Falsification tests
- Effects of the program on outcomes not related to the program

EVIDENCE



INTERVENTIONS

STUDY	PRE	POST	COMPARISON GROUP	IMPACT
Chernew 2008	$5 generic/ $25 preferred brand/ $45 nonpreferred brand	$0 generic/ $12.50 preferred brand/ $22.50 nonpreferred brand	Similar, large firm with the same disease management program	Positive effects in 4 of 5 medication classes (ACE, ARB, beta blockers, statins, inhaled corticosteroids): 2.6-4 percentage points
Gibson 2011a	20% coinsurance retail/ 10% coinsurance mail-order; $10 minimum/ $40 max	10% coinsurance retail/ 7.5% coinsurance mail-order; $10 minimum / $40 maximum	Similar, large firms from the MarketScan Database, propensity score matched	Sustained effects in cardiovascular medications 0.5-1.8 percentage points. No sustained effects in asthma and diabetes medications.
Gibson 2011b	10% generic/ 20% preferred brand/ 35% nonpreferred brand	10% Diabetes medications	Same firm, propensity score matched	1-6 percentage point increase for VBID+DM. No significant increase for VBID with no DM.

Lee et al. 2013

Systematic review of VBID studies

13 studies

Average increase in adherence 3.0 percent in a year

Lower out of pocket spending for patients

No change in overall spending

Diabetes VBID Evidence

At least 25 original studies assessing the impact of VBID for diabetes

INTERVENTIONS:

Reducing copayment/coinsurance levels by tier (e.g., reducing brand name preferred copayments)

Reducing copayments for disease-specific brand-name medications

Eliminating cost sharing for the lowest copay tier

Rarely, eliminating all copayments for specific medications for employees with diabetes.

Diabetes VBID Evidence

RESULTS:

Increase in adherence (maximum 7.4% in the first year)

For the few that assessed spending, mixed results on spending, mainly cost neutral

A few studies waived copayments for non-pharmaceutical services, with positive results, although all were uncontrolled

A Comprehensive Diabetes Management Value-Based Program Improved Utilization of and Adherence to Diabetes Services

GIBSON TB, MACLEAN JR, CARLS GS, MOORE BJ, EHRLICH ED, SHEPPERLY D, BAIGEL C

Funded by Bristol-Myers Squibb. All opinions expressed are those of the authors.

Diabetes Management

Strength/Intensity of the Intervention

Service	Before	After
Medications (Diabetes, Cholesterol-lowering, Selected Cardiovascular)	20% coinsurance, $0 copayment waiver for certain medications	$0
Diabetes-related Office Visits	20% coinsurance Standard Medical Plan $30 primary care/$40 specialty care in Other Plans	$0
Diabetes-related Laboratory Tests	$30 or $40 (varied by plan)	$0
Supplies	20% coinsurance	$0

Matched Comparison Group

FIRMS

- 9 firms not offering a VBID option with similar workforce composition
- Similar pre-period spending, medication adherence and utilization trends
- Selected from 150 large and medium sized firms in the Truven Health MarketScan Commercial Database

INDIVIDUALS

- Within comparison firms
- With diabetes
- Meeting enrollment and selection criteria

VBID Study

Length of Time Studied

- 2 years post-implementation

Size of Groups

- Intervention Group: 444 adults
- Comparison Group: 444 adults (out of a pool of 6,536 individuals)

Methods of Comparison

- Multivariate models, panel data framework

Outcomes/Measures

Adherence to and Utilization of Medications

- Diabetes
- Cholesterol-Lowering
- Cardiovascular

Utilization of Services

- Diabetes Supplies
- Office Visits
- Lab Tests

Net Payments

- Prescription Drug
- Medical
- Total

Limitations

Administrative Data

Single Employer

Baseline copayment waiver for a small number of medications

Choudhry and Colleagues NEJM 2011.

MI FREEE Trial

- Post Myocardial Infarction Free Rx Event and Economic Evaluation (MI FREEE) Trial

Strength/Intensity of the Intervention

- Existing Plan ⟶ $0 copayment for statins, beta blockers and ACEI/ARB
- Patients post-Acute Myocardial Infarction hospitalization

Comparison group

- Cluster randomized by plan sponsor (e.g., employer, union) within a large insurer randomized to full coverage or existing plan prior to intervention
- Plan sponsors agreed to participate or not

Choudhry and Colleagues NEJM 2011.

Length of time studied

- Varied, median 294 days (IQR: 201-663 days)

Size of groups

- Full coverage (2,845 patients, 1,494 plan sponsors)
- Usual coverage (3,010 patients, 1,486 plan sponsors)

Outcomes/Measures

- Medication Utilization
  - Percent of days covered, Percent fully adherent
- Clinical
  - First major vascular event or revascularization, total vascular events and revascularization, first major vascular event
- Spending

RESULTS (FULLY COVERED VS. USUAL COVERAGE)

Adherence/Medication Utilization

- Percent of days covered for all classes (ACEI/ARB, beta blockers, statins, all classes) 
- Percent of patients that were fully adherent for all medication classes 

Clinical Outcomes

- First major vascular event or revascularization 
- Major vascular events (fatal or nonfatal MI, stable angina, CHF, stroke): 
- Total major vascular events or revascularization: 

RESULTS

Effects on Health Spending

- Patient Spending (out of pocket):
  - Prescription drug:
  - Medical:
  - Total:

- Total Spending (health plan, patient):
  - Prescription drug:
  - Medical:
  - Total:

DESIRABLE EVIDENCE

Role of office visit cost-sharing

Cost-sharing and children

VBID and high deductible health plans

Income effects

Other effects:

- Quality and Outcomes
- Productivity
- Quality of Life (Patient-Reported Outcomes)
- Patient Engagement

DESIRABLE EVIDENCE

Optimal health insurance

- Balance moral hazard with risk aversion

Randomization to intervention/control groups