Health Economics: Value-Based Benefits & Analytics

Vermont House Health Care Committee
Ellen Meara, PhD

MARCH 26, 2014
Americans’ (Lack of) Understanding of Health Insurance, 9/13

Goals

1. There is a tradeoff between insurance and costs

2. Cost-sharing lowers health care spending

3. Cost-sharing has unintended consequences
Goals

1. There is a tradeoff between insurance and costs

2. Cost-sharing lowers health care spending

3. Cost-sharing has unintended consequences
Why do we want health insurance?

Protection in case of (major) illness/injury

How is health insurance different?

Not a one-time event like fires/accidents
Tradeoff Between Insurance and Costs

- Patients are not fully informed
- Providers paid to do more
- Both shielded from financial consequences

Moral hazard
Goals

1. There is a tradeoff between insurance and costs

2. Cost-sharing lowers health care spending

3. Cost-sharing has unintended consequences
How Has Cost-Sharing Been Used?

- Deductible and Coinsurance

- Copayment

- Tiered Formularies

- Value-Based Insurance Design

- High Deductibles
Cost-Sharing Effects

Deductible and Coinsurance

Copayment

Tiered Formularies

Value-Based Insurance Design

High Deductibles

How Has Cost-Sharing Been Used?
## Cost-Sharing Effects: Deductible and Coinsurance

### RAND Randomly Assigned 5,800 People

<table>
<thead>
<tr>
<th>Plan (arm)</th>
<th>Coinsurance</th>
<th>Max Out-of-Pocket as % of Income</th>
<th>Deductible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Care</td>
<td>0%</td>
<td>NA</td>
<td>$0</td>
</tr>
<tr>
<td>25%</td>
<td>25%</td>
<td>5%</td>
<td>$0</td>
</tr>
<tr>
<td>50%</td>
<td>50%</td>
<td>10%</td>
<td>$0</td>
</tr>
<tr>
<td>95%</td>
<td>95%</td>
<td>15%</td>
<td>$0</td>
</tr>
<tr>
<td>Deductible</td>
<td>0%</td>
<td>NA</td>
<td>$150 – single</td>
</tr>
</tbody>
</table>

**Deductible**

- $150 - single
- $450 - family
Cost-Sharing Effects: Deductible and Coinsurance

Percent of Beneficiaries Getting Any Medical Care

Source: Manning et al. (1988). Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment.
Cost-Sharing Effects: Deductible and Coinsurance

Percent of Beneficiaries with One or More Inpatient Admissions

- Free care
- 25% coins.
- 50% coins.
- 95% coins.
- Deductible

p-value = 0.0006 for difference across plans

Source: Manning et al. (1988). Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment.
Cost-Sharing Effects: Deductible and Coinsurance

Annual Number of Face-to-Face Visits Per Beneficiary

- Free care: 4.5 visits
- 25% coins.: 3.5 visits
- 50% coins.: 3.0 visits
- 95% coins.: 2.5 visits
- Deductible: 1.5 visits

p-value < 0.001 for difference across plans

Source: Manning et al. (1988). Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment.
Cost-Sharing Effects: Deductible and Coinsurance

Total Annual Expenditures Per Beneficiary (1984 Dollars)

- Free care
- 25% coins.
- 50% coins.
- 95% coins.
- Deductible

Source: Manning et al. (1988). Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment.

p-value = 0.003 for difference across plans
Cost-Sharing Effects: Deductible and Coinsurance

**Utilization**

Higher coinsurance reduces effective and ineffective care by the same amount. A 10% rise in cost to patients led to 2% lower spending.

**Outcomes**

Higher coinsurance does not affect health outcomes for healthy beneficiaries. Low-income groups at-risk of illness had adverse effects.
Cost-Sharing Effects

- Deductible and Coinsurance
- Copayment
- Tiered Formularies
- Value-Based Insurance Design
- High Deductibles

How Has Cost-Sharing Been Used?
Cost-Sharing Effects: Copayment

Utilization

10% rise in price leads to 1.5% decline in utilization.

Reductions occurred for acute, chronic, other drugs.

Outcomes

Hospitalizations went up (especially for sickest)
Cost-Sharing Effects: Copayment

Utilization

Higher copayments lead to decreased utilization.

Outcomes

Higher copayments do not result in a hospital offset.
Cost-Sharing Effects

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Cost-Sharing Effects: Tiered Formularies

Utilization

Drug spending declined, regardless of drug class.

Outcomes

Some patients stopped altogether.
Percent Discontinuing Use in Drug Class

* P <.0001 for difference between intervention & comparison groups
^ P =.04 for difference between intervention & comparison

ACE PPI Statins

Intervention Comparison

0 5 10 15 20 25 30 35

ACE PPI Statins

*
Cost-Sharing Effects: Tiered Formularies

Percentage Point Change In Spending, Intervention - Control Group

*P <0001 for difference between intervention & comparison groups
Cost-Sharing Effects

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Cost-Sharing Effects: Value-Based Insurance Design

Impact Of Decreasing Copayments On Medication Adherence Within A Disease Management Environment

Value-based cost sharing can increase patients’ adherence to important medications.


ABSTRACT: This paper estimates the effects of a larger employer’s value-based insurance initiative designed to improve adherence to recommended treatment regimens. The intervention reduced copayments for five chronic medication classes in the context of a disease management (DM) program. Compared to a control employer that used the same DM program, adherence to medications in the value-based intervention increased for four of five medication classes, reducing nonadherence by 7-14 percent. The results demonstrate the potential for copayment reductions for highly valued services to increase medication adherence above the effects of existing DM programs. (Health Affairs 27, no. 1 (2008): 109-115; 10.1377/hlaff.27.1.109)

In 2002 Pitney Bowes reduced copayment rates for several classes of prescription drugs that are important in the treatment of chronic disease. This intervention represents one example of a Value-Based Insurance Design (VBID) because it connects patients’ cost sharing to the value of health care services. This initiative received considerable attention in the employer and policy communities. Although Pitney Bowes reported favorable clinical results and cost savings...

Utilization

10% drop in price leads to 1-4% rise in Rx use
Cost-Sharing Effects

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Cost-Sharing Effects: High Deductibles

Utilization

Reduction in utilization overall, even for free preventive care
Cost-Sharing Effects: High Deductibles

Utilization

Reduction in Emergency Room use even for severe emergencies
Cost-Sharing Effects: High Deductibles

Outcomes

Distorts timing of care
# Cost-Sharing Effects

<table>
<thead>
<tr>
<th>Type of cost sharing</th>
<th>Utilization fell as price rose?</th>
<th>Adverse events vs. better health care?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Deductible</strong></td>
<td>Yes – indiscriminately by service &amp; population</td>
<td>Perhaps for low income, sickest patients</td>
</tr>
<tr>
<td><strong>Coinsurance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Copay</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tiered formularies</strong></td>
<td>Yes – all drugs</td>
<td>Some evidence in asthma patients over age 5</td>
</tr>
<tr>
<td><strong>Value-based design</strong></td>
<td>Yes-</td>
<td>Increased medication compliance</td>
</tr>
<tr>
<td><strong>High deductibles</strong></td>
<td>Yes – even for “exempt” services</td>
<td>Not studied</td>
</tr>
</tbody>
</table>
Cost-Sharing Effects

Things to keep in mind

Estimated effects of cost-sharing are remarkably consistent across settings:
• Every 10% rise in price causes fall in use/spending that is 4% or less (most are around 2.0%)

Health effects hard to demonstrate
• Average, healthy patient not affected
• Adverse events possible for sicker, poorer patients
Cost-Sharing Effects

Will cost-sharing contain medical spending?
• YES, by about 20% if cost-sharing doubles

Will cost-sharing contribute to Act 48 goals of high-quality care & sustainable costs?
• Not nearly as likely for sickest, most vulnerable Vermonters
• Should be exercised strategically
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