

Evidence of CDHP's Influence on Pharmacy Utilization

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The Promise of Consumer Direction

"Health Savings Accounts all aim at empowering people to make decisions for themselves, owning their own health-care plan, and at the same time bringing some demand control into the cost of health care."

President George W. Bush
1/27/2005 Washington Post

Critiques of Consumer Direction

- Risk of under utilization of appropriate care (particularly for those with low incomes or chronic illness)
 - Concern over risk for income and race/ethnicity-based disparities in health
- Not designed to reduce utilization for those who cost the system the most money
- Complex design
- Risk segmentation

What is the Verdict?

- The jury is still out- to date, few rigorous studies have been conducted
- What we do know:
 - When CDHPs are voluntary, the healthier and more educated tend to enroll
 - Enrollees in CDHPs report becoming more cost aware and taking better care of their chronic conditions
 - Enrollees in CDHPs report forgoing care more often than those in PPOs

Pharmacy Evidence

Parente and colleagues found:

- In the first year the growth in pharmacy expenditures for CDHP enrollees was half that of HMO and PPO members (18% versus 35% and 47%)
- In the second year, the growth was comparable for CDHP and PPO enrollees, and lower for HMO members

"Evaluation of the Effect of a Consumer-Driven Health Plan on Medical Care Expenditures and Utilization," *Health Services Research*, 2004

Research Question

Does enrollment in CDHPs influence chronic illness-related prescription drug utilization?

- In cost effective ways?

Generic substitution

- In risky ways?

Reducing adherence

Discontinuing drug class

Setting

- One large employer in the manufacturing sector
 - Employees are largely middle class, and disproportionately white
 - Few employees with very low education or income
- Company offered two HRA model CDHPs in 2004, alongside a PPO and an indemnity plan

Plan Details

| | High Deductible CDHP | Lower Deductible CDHP | PPO |
|------------------------------------|----------------------|-----------------------|------------------|
| 2004 Annual Family Premium | | | |
| Hourly | \$420 | \$1,260 | \$1,260 |
| Salary | \$420-\$1128 | \$1,260-\$2,600 | \$1,260-3,600 |
| Deductible Level | \$3,000 | \$2,000 | \$600 / \$1,050* |
| Personal Care Account (PCA) | \$1,500 | \$1,500 | N/A |
| Gap (Deductible-PCA) | \$1,500 | \$500 | N/A |
| Office Visit Co-Pay (in network) * | 10% | 10% | \$15 |
| Hospital Co-Pay (in network) * | 10% | 10% | 20% |

*After deductible is reached for CDHPs

Plan Enrollment Trends

| Enrollment by Year | High Deductible CDHP | Lower Deductible CDHP | PPO | Indemnity |
|--------------------|----------------------|-----------------------|-----|-----------|
| 2004 | 13% | 23% | 60% | 4% |
| 2005 | 13% | 41% | 43% | 3% |
| 2006 | 16% | 54% | 26% | 4% |

Plan Selection

- High deductible CDHP enrollees were substantially healthier and had higher education levels than PPO enrollees (among hourly and salaried employees)
 - They were no more likely to report risky cost saving behaviors
- Lower deductible CDHP enrollees more closely resembled PPO enrollees, but were more consumer oriented

Methods

- Examine pharmacy claims for employees (continually employed 7/03-1/05) and their dependents (n=31,552)
- Analyze utilization in 2004 among those who took chronic illness medications in 6 classes during 2nd half of 2003
 - Generic use ratio
 - Medication possession ratio
 - Discontinuation of class
- Compare across pharmacy plans (2 CDHPs versus 3-tiered co-payment plan)

Pharmaceutical Claims in 2003 By Plan Enrollment in 2004

| Percent With Prescription Claims in Class During 2 nd Half of 2003 | Plan Enrollment in 2004 | | | |
|--|--|---|---|-------------|
| | High Deductible CDHP (n=4,120) | Lower Deductible CDHP (n=9,379) | 3-Tiered Formulary (n=18,053) | P- Value |
| Antidepressants | 5.4 | 8.8 | 8.8 | <0.00 |
| Antidiabetics | 0.8 | 2.3 | 2.4 | <0.00 |
| Antihypertensives | 4.6 | 10.7 | 10.5 | <0.00 |
| Antiulcerants | 2.6 | 6.8 | 6.8 | <0.00 |
| Asthma Controllers | 2.0 | 2.8 | 2.7 | 0.03 |
| Lipid Lower Drugs | 2.8 | 6.5 | 5.1 | <0.00 |
| Any of the 6 Groups | 13.8 | 24.6 | 24.1 | <0.00 |

There is a strong pattern of favorable selection into the High Deductible Plan

Proportion of Claims in the Class That Were Generic 2nd Half of 2003 Compared with 2004

| Drug Class | High Deductible CDHP | Lower Deductible CDHP | 3-Tiered Formulary | P-Value |
|--------------------|-----------------------------|------------------------------|---------------------------|----------------|
| Antidepressants | 24% to 27% | 28% to 34% | 29% to 34% | 0.31 |
| Antidiabetics | 32% to 52% | 31% to 48% | 26% to 48% | 0.33 |
| Antihypertensives | 49% to 52% | 42% to 43% | 45% to 48% | 0.71 |
| Antiulcerants | 26% to 23% | 23% to 23% | 19% to 19% | 0.60 |
| Asthma Controllers | 2% to 1% | 3% to 2% | 2% to 2% | 0.72 |
| Lipid Lower Drugs | 4% to 3% | 5% to 5% | 5% to 4% | 0.75 |

The p-value indicates how likely the change in generic use is the same across the three plans.

No significant trend of switching to generics within any single plan or across therapeutic categories with the exception of Anti-Diabetics.

Medication Possession Ratio 2nd Half of 2003 Compared with 2004

| Drug Class | High Deductible CDHP | Lower Deductible CDHP | 3-Tiered Formulary | P-value |
|--------------------|-----------------------------|------------------------------|---------------------------|----------------|
| Antidepressants | 79% to 75% | 79% to 72% | 76% to 69% | 0.64 |
| Antidiabetics | 118% to 114% | 119% to 117% | 113% to 110% | 0.93 |
| Antihypertensives | 108% to 108% | 112% to 114% | 108% to 108% | 0.63 |
| Antiulcerants | 65% to 58% | 71% to 66% | 69% to 63% | 0.92 |
| Asthma Controllers | 62% to 54% | 71% to 71% | 68% to 61% | 0.15 |
| Lipid Lower Drugs | 86% to 83% | 87% to 85% | 83% to 81% | 0.91 |

The p-value indicates how likely the change in MPR is the same across the three plans.

There was no significant plan difference in the change in MPR between 2003 and 2004, among those who continued taking the class

Percent of Enrollees that Discontinued Prescriptions For Chronic Illness Medications in 2004

| Drug Classes | High Deductible CDHP | Lower Deductible CDHP | 3-Tiered Formulary | P-value |
|---------------------|-----------------------------|------------------------------|---------------------------|----------------|
| Antidepressants | 20.8% (221) | 17.8% (824) | 20.9% (1582) | 0.19 |
| Antidiabetics | 19.4% (31) | 7.5% (213) | 7.3% (427) | 0.05 |
| Antihypertensives | 13.2% (190) | 6.3% (1005) | 6.7% (1904) | < 0.01 |
| Antiulcerants | 40.2% (107) | 22.5% (637) | 21.9% (1228) | < 0.01 |
| Asthma Controllers | 35.8% (81) | 19.7% (264) | 32.8% (491) | < 0.01 |
| Lipid Lower Drugs | 14.5% (117) | 8.2% (612) | 7.9% (923) | 0.05 |

Pattern of higher discontinuation in the High Deductible CDHP over other plans for 4 of six drug classes.

Multivariate Models

- Use logistic regression to examine factors predictive of dropping a drug class
- Control for:
 - Adherence in 2nd half of 2003
 - Comorbidity Index (Charlson)
 - Demographics: gender, age, race/ethnicity

Logistic Regression Models Predicting 2004 Discontinuation

| Characteristics | Odds Ratios | | | | | |
|--|-------------------------------|---------------------------|---------------------------------|-----------------------------|----------------------------------|-----------------------------------|
| | Anti-depressants (n=2,627) | Anti-diabetics (n=671) | Anti-hypertensives (n=3,099) | Anti-ulcerants (n=1,972) | Asthma Controllers (n=836) | Lipid Lower Drugs (n=1,652) |
| Plan | | | | | | |
| High Ded. CHDP | 1.06 | 4.79* | 2.07** | 2.13** | 1.07 | 3.42*** |
| Lower Ded.CHDP | 0.96 | 1.09 | 0.99 | 1.06 | 0.70*** | 1.11 |
| Three-Tiered For. | (1.00) | (1.00) | (1.00) | (1.00) | (1.00) | (1.00) |
| Medication Possession Ratio 2 nd Half of '03 | 0.03*** | 0.05*** | 0.05*** | 0.03*** | 0.03*** | 0.04*** |
| Charlson Index | 1.14* | 1.02 | 1.08 | 1.04 | 0.85 | 0.91 |
| Sex | | | | | | |
| Male | (1.00) | (1.00) | (1.00) | (1.00) | (1.00) | (1.00) |
| Female | 0.85 | 1.83 ^{\$} | 1.08 | 0.87 | 0.99 | 1.03 |
| Age | | | | | | |
| <35 | 1.61* | 2.88 ^{\$} | 2.29** | 2.79*** | 1.07 | 2.61* |
| 35-<45 | 1.05 | 1.36 | 1.15 | 1.37 | 1.10 | 1.87* |
| 45-<55 | 0.86 | 1.95 | 0.91 | 1.48* | 0.81 | 1.25 |
| 55+ | (1.00) | (1.00) | (1.00) | (1.00) | (1.00) | (1.00) |

^{\$}p<.10 *p<.05 **p<.01 ***p<.001

The models also control for employee type (hourly, nonexempt salary, exempt salary, executive salary) and race/ethnicity

Regression Results

- Controlling for demographic, health and prior adherence, high deductible CDHP enrollees are still more likely to drop 4 of 6 classes of chronic medications
- Adherence in 2003 was very protective against dropping chronic medications
- Health status was not predictive of dropping chronic medications

Summary of Key Findings

- Neither CDHP:
 - Catalyzed greater generic use
 - Influenced adherence to chronic illness medications (among those who continued medication)
- The high deductible CDHP:
 - Increased likelihood of discontinuing several classes of “essential” chronic illness medications, but not all
 - Increased likelihood of discontinuing anti-ulcerants, which have over the counter substitutes
- The lower deductible CDHP:
 - Reduced the likelihood of discontinuing asthma controllers

Impact on Disparities

The percent dropping antidiabetics,
antihypertensives, or lipid lowering medications

| Subgroup | High Deductible CDHP (n=258) | Lower Deductible CDHP (n=1,325) | 3-Tiered Formulary (n=2,418) |
|-----------------|---|--|---|
| Salaried | 13.0% | 8.7% | 7.9% |
| Hourly | 21.7% | 9.4% | 9.2% |
| White | 15.2% | 9.2% | 8.5% |
| Minority | 25.9% | 8.3% | 12.4% |

Pattern of higher discontinuation among lower SES and minority enrollees in high deductible CDHPs.

Limitations

- Using claims as measure of taking chronic illness medications
- Examining changes in prescription drug utilization only after one year of enrollment, more research is needed over a longer time span
- This is the experience of 1 employer and the market is rapidly changing

Policy Implications

- The level of the deductible matters in CDHPs (selection & impact)
- Monitoring high deductible CDHP enrollees (and others) at high risk for doing these and other “risky behaviors”
- Employers should strongly consider first dollar coverage for preventive medications currently allowed in the HSA regulations
- Congress should revisit allowing first dollar coverage in HSAs for chronic illness medications

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