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RESEARCH ARTICLE

How Effective Are Copayments in Reducing Expenditures for Low-Income Adult Medicaid Beneficiaries? Experience from the Oregon Health Plan

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Objectives. To determine the impact of introducing copayments on medical care use and expenditures for low-income, adult Medicaid beneficiaries.

Data Sources/Study Setting. The Oregon Health Plan (OHP) implemented copayments and other benefit changes for some adult beneficiaries in February 2003.

Study Design. Copayment effects were measured as the "difference-in-difference" in average monthly service use and expenditures among cohorts of OHP Standard (intervention) and Plus (comparison) beneficiaries.

Data Collection/Extraction Methods. There were 10,176 OHP Standard and 10,319 Plus propensity score-matched subjects enrolled during November 2001–October 2002 and May 2003–April 2004 that were selected and assigned to 59 primary care-based service areas with aggregate outcomes calculated in six month intervals yielding 472 observations.

Results. Total expenditures per person remained unchanged (+2.2 percent, $p = .47$) despite reductions in use (− 2.7 percent, $p < .001$). Use and expenditures per person decreased for pharmacy (− 2.2 percent, $p < .001$; − 10.5 percent, $p < .001$) but increased for inpatient (+27.3 percent, $p < .001$; +20.1 percent, $p = .03$) and hospital outpatient services (+13.5 percent, $p < .001$; +19.7 percent, $p < .001$). Ambulatory professional (− 7.7 percent, $p < .001$) and emergency department (− 7.9 percent, $p = .03$) use decreased, yet expenditures remained unchanged (− 1.5 percent, $p = .75$; − 2.0 percent, $p = .68$, respectively) as expenditures per service user rose (+6.6 percent, $p = .13$; +7.9 percent, $p = .03$, respectively).

Conclusions. In the Oregon Medicaid program applying copayments shifted treatment patterns but did not provide expected savings. Policy makers should use caution in applying copayments to low-income Medicaid beneficiaries.

Key Words. Medicaid, cost-sharing, medical expenditures

Cost sharing has been an increasing theme as states' have renewed an emphasis on redesigning Medicaid programs to obtain cost-savings (Ku 2003). These changes include the introduction of substantial copayments for medical services. One impetus for cost sharing is the potential to provide Medicaid services at a lower cost per individual, allowing more individuals to be covered at any level of total expenditures. This concept has been central to legislation that has provided expanded Medicaid cost-sharing opportunities to states, including the 2001 Health Insurance Flexibility Act (HIFA) and the more recent 2005 Deficit Reduction Act, and is implicitly based on the assumption that cost-sharing will deliver the desired savings (National Governor's Association 2001; The Kaiser Commission on Medicaid and the Uninsured 2006). There is, however, very limited research to guide policy makers on the effectiveness of cost-sharing policies in reducing Medicaid expenditures. In 2003, the state of Oregon implemented changes to its Medicaid program, the Oregon Health Plan (OHP), incorporating comprehensive and substantial copayments for some of its adult beneficiaries. This study uses this natural experiment to investigate the impact of copayments on the use and expenditures of OHP members.

The seminal work on health care copayments is the Rand Health Insurance Experiment, which found that copayments could significantly reduce health care use and expenditures without, on the whole, reducing health outcomes (Manning et al. 1987; Newhouse 1993). Analyses of persons with low-incomes or chronic conditions did find some decrements in the use of effective care attributable to copayments (Keeler et al. 1985; Lohr et al. 1986; Lurie et al. 1989). This effect was additive for low-income, chronic condition individuals, which could be a point of concern regarding Medicaid populations where these joint conditions are quite prevalent. These negative effects were only found on the benefit side. Expenditures were proportionally reduced for these groups compared with others, and there was not a "cost-offset" effect, i.e., changes in health care use under copays that led to more expensive care than would have occurred without them (Gruber 2006).

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A potential limitation of the HIE results for low-income individuals is that income effects were mitigated by design (to focus on price effects) through mechanisms such as limiting the maximum amount of copayments to a percentage of income. Such income-based protections are not evident in emerging Medicaid rules or policies, including Oregon's policy. This raises the potential for unintended supply or demand effects due to the inability to pay that could incur cost-offsets. Consumers may avoid care until they are more ill, potentially incurring greater loss of health status and/or greater health care expenditures. Providers, anticipating lower expected reimbursement, may limit access or shift use to providers more willing to absorb potential losses from unpaid copays.

There is also a growing body of literature focused on copayments or caps applied to pharmacy benefits indicating that cost-offsets can occur. Several of these studies apply to low-income individuals in public insurance settings (Helms, Newhouse, and Phelps 1978; Soumerai et al. 1991, 1994; Tamblyn et al. 2001), and also extend to higher income individuals and private insurance settings (Huskamp et al. 2003; Anis et al. 2005; Rosen et al. 2005; Hsu et al. 2006b). Newhouse (2006) summarizes this body of research and notes their consistency with recent economic findings that some individuals may discount future benefits so significantly that they will forgo current activities, such as taking medication, which would prevent future losses in health status and/or health expenditures.

Overall, copayments provide significant opportunities and risks, the balance of which is likely dependent upon the specific design and context of their application. In this paper, we analyze changes in use and expenditures for low-income adult OHP members before and after implementation of substantial copayments and in comparison with other low-income adults who did not experience this change to assess the extent of cost-savings and any changes in specific treatment patterns that may inform the overall change and the issues raised above.

METHODS

Setting

Beginning in February of 2003, the state fundamentally changed its Medicaid program, the OHP, creating two levels of Medicaid coverage. Approximately 300,000 adults and children categorically eligible under the Social Security Act became "OHP Plus" members, retaining existing coverage. The remaining 100,000 enrollees, ages 18–64 years with incomes under 100 percent of the

Federal Poverty Level (FPL) who did not fall under any of the traditional Medicaid eligibility categories, but who were eligible under Oregon's Medicaid waiver, became "OHP Standard" members.

The new OHP Standard benefit package eliminated coverage for outpatient mental health and substance abuse treatment services, dental, vision, hearing, durable medical equipment (DME), and nonemergent transportation and copayments were applied to the remaining covered benefits. Some existing monthly premiums were increased and a stricter premium payment policy implemented that penalized a missed monthly payment with disenrollment and a 6-month re-enrollment "lock-out." Table 1 outlines the copayment structure and lists the benefits eliminated. In contrast to prevailing federal statutes for categorical populations, providers could refuse services if OHP Standard beneficiaries did not pay their copayments, and there were no limits on aggregate copayment expenditures.

Design Overview

We use a retrospective propensity score-matched cohort design to estimate the effects of the copay policy. The policy effects are identified as the difference-

Table 1: Copayments and Excluded Services under the Standard Benefit Package

	Copayment Schedule
Service	*Copayment Amount(s) and Conditions*
Inpatient	$250 per admission
Hospital outpatient	$20 surgery, $5 other
Emergency department	$50, waived if admitted
Physician	$5, waived for vaccine or preventative services
Lab and radiology	$3 each
Pharmacy	$2 preferred brand, $3 generic, $15 other brand
Emergency transportation	$50
Home health and other therapists	$5
Services excluded from the Standard benefit package	Outpatient mental health
	Outpatient substance abuse (including Methadone)
	Durable Medical Equipment
	Dental services
	Vision services and supplies
	Hearing services and supplies
	Nonemergency transportation

There was no limit on the aggregate amount of copayments charged to Standard enrollees and providers could refuse services for inability to pay.

in-difference between a fixed cohort of OHP standard enrollees before and after the benefit change in comparison with a fixed cohort OHP Plus enrollees whose benefits were unaffected by this policy. We estimate rates of change in the average monthly percentage of enrollees using a service type; average monthly expenditures per service user; and their product, expenditures per enrollee per month. These measures are assessed across and within the services covered under the postpolicy Standard benefit package.

There are two main threats to our research design: (1) the elimination of specific benefits, which may incur substitution to the remaining benefits, concurrent with copay implementation; and (2) differences in OHP Plus and Standard enrollees that determined their Medicaid eligibility that may not be captured entirely by the propensity score matching process. We address these issues through data selection (e.g., eliminate any mental health or substance abuse inpatient stays) and sensitivity testing as described in detail below.

Study Subjects

Our analysis used annual periods before and after the policy change: November 2001 through October 2002 and May 2003 through April 2004. We excluded 3 months before and after the February 2003 policy change in order to avoid short-term implementation effects. Study subjects were first selected on the following criteria: age 18–64 years, enrolled at least 3 months in each half year within the two annual study periods, consistently enrolled as Plus (Temporary Aid to Needy Families, Blind or Disabled eligible only) or Standard after the policy change, not diagnosed with schizophrenia or giving birth during the study period, and with complete utilization data.

The age restriction follows Standard eligibility criteria and the enrollment criteria are designed to balance inclusiveness and measurement of longer-term effects of the policy. The exclusion of those diagnosed with schizophrenia and giving birth reflects the lack of representation within the Standard population of these conditions as they provide options for categorical eligibility. As noted below, pharmacy data for some managed care organizations were incomplete or missing within the study period requiring exclusion of some individuals solely due to data availability. These criteria identified 10,381 OHP Standard enrollees and 15,140 OHP Plus enrollees.

We then used a propensity score matching process to obtain cohorts comparable on a set of demographic and health condition indicators with covariate balance and proportional representation across the propensity score distribution (D'Agostino 1998; Dehejia and Wahba 2002). Propensity scores

were based on age, gender, race, ethnicity, presence of a chronic physical illness, and prepolicy use of the outpatient mental health or chemical dependency benefit and their interactions. This yielded a final sample of 10,176 OHP Standard and 10,319 OHP Plus beneficiaries.

Data Sources

We used Oregon Medicaid eligibility files, fee-for-service claims, and managed care organization encounter data. Claims and encounter data were aggregated into service categories based on a protocol developed by the state's actuaries for managed care rate setting that delineated the categories for copayments and benefit elimination. We excluded data for the services eliminated under the policy, as well as transportation, which was not well suited for aggregation into the other broader designations. We also removed all nonpharmacy claims within the remaining benefits with primary mental health or substance abuse diagnoses (290.00–316.99), and all drug claims within the two therapeutic drug classes comprising psychotropic drugs. Some managed care organizations did not report pharmacy data during some months in the study period leading to the exclusion of some potential subjects as noted above.

Use and Expenditures

We measured use and expenditures for services covered under the Standard benefit in total; (outpatient) pharmacy and all other medical services; and nonpharmacy services by inpatient, (ambulatory) emergency department, (ambulatory) lab and radiology, hospital outpatient and all other ambulatory professional services. Professional service records were attributed to the facility-based service categories for all of the nonpharmacy categories except hospital outpatient, where we could not consistently match professional and facility-based data. We calculated expenditures based on the average fee-for-service rates paid by the state over the entire study period to eliminate price change effects. These rates were not discounted for the copayments in the postpolicy period in order to measure the change in total expenditure value. We provide separate, direct estimates of the percentage savings to the state from shifting expenses to consumers through the copayments as well as the percentage savings from the eliminated benefits.

To allow for simple, direct, and efficient estimation of our outcome measures, we calculated aggregate monthly averages by service region in each of four 6-month study periods for the three interrelated dependent measures. We first calculated monthly averages for each subject in each 6-month period.

Subjects were then assigned by zip code to one of 130 primary care service areas defined by the Oregon Office of Rural Health. Geographically contiguous primary care service areas with similar general characteristics (e.g., rural) were further aggregated to service regions with an approximate minimum of 50 subjects to assure stable, representative aggregates with nonzero values. This resulted in 59 service regions averaging 174 subjects (range: 45–640) for a total of 472 observations across the four time periods and two beneficiary categories.

Statistical Analysis

We estimate a weighted, fixed effects model incorporating a standard difference-in-difference specification, which includes a dummy variable for the postpolicy observations, a dummy variable for the intervention group (Standard), and their interaction that captures the "difference-in-difference" or any differences in Standard group treatment trends from the Plus group after adjusting for initial differences. To efficiently capture initial differences across the aggregate observations due to either variations in subject characteristics or local treatment supply, we also included dummy variables for each service region and beneficiary group.

The dependent variables are log transformed to allow estimation of the relative rate of change in use and expenditures. We test for heteroskedasticity to assure that the regression coefficients reflect rates of change in the mean of the untransformed dependent measures (Manning 1998). Using the White test, we fail to reject the hypothesis of constant variance within groups over time (White 1980). For each dependent measure and service type, we present the postpolicy net percentage change derived from our estimates for the Plus subjects alone, the Standard subjects alone and then the difference-in-difference. Because the difference-in-difference is measured as a rate of change, it is derived from the ratio of full percentage changes in each group from their initial levels, and is not the additive sum of the net percentage changes for each group. We footnote the results tables accordingly to avoid this potential misinterpretation.

Observations are weighted in the regression analyses by the number of subjects in each regional aggregate to account for underlying differences in the variance of the aggregate measures based on different subject numbers. We also used Huber/White/sandwich estimates of the standard errors to adjust for heteroskedasticity generally and specifically for the repeated observations in the pre- and postpolicy periods (Huber 1967; White 1980).

Sensitivity Testing

We ran our models using a variety of different sampling schemes to test the sensitivity of results in regard to the two main threats previously identified: the appropriateness of the OHP Plus members as a comparison group and the potential impact of benefit elimination concurrent with copay introduction. To test the comparison group effects, we split the comparison group into those eligible for Temporary Assistance for Needy Families (TANF) and those eligible by disability status and ran independent comparisons with the Standard group. To test the impact of benefit elimination, we focused on the mental health/chemical dependency (MH/CD) and DME benefits as the most likely areas for cross-benefit effects. In comparison with the results presented, which exclude claims within the continuously covered services that had mental health or substance abuse diagnoses, we ran our model excluding all prepolicy users of the MH/CD benefit, anyone who received a service with a primary mental health of substance abuse-related diagnosis pre- or postpolicy, and excluding all prepolicy users of the DME benefit.

RESULTS

Characteristics of the Enrollees

Table 2 provides descriptive data on the enrollees in the Plus and Standard samples. Consistent with the propensity score matching on these measures, only very small and statistically insignificant differences are evident. The use and expenditure measures indicate consistently higher rates of use and expenditures among the Plus sample. This reflects the differences in these populations inherent in their OHP eligibility characteristics and underscores the fact that this is a nonequivalent comparison group. The sample selection criteria result in samples from both groups that are older and have a higher prevalence of chronic illness and behavioral health service use than the underlying population.

Use and Expenditures Changes

Total, Pharmacy, and All Other Medical Care. Table 3 provides estimates of the percentage change across the three dependent measures for all services covered in the Standard benefit package after the policy change, as well as for outpatient pharmacy services and all other medical services separately. For the total of services covered, there was a reduction in use for the Standard group relative to the Plus comparison group, but no discernible reduction in

Table 2: Characteristics of the Study Population

Characteristic	*Standard (Intervention) Group (N= 10,176)*	*Plus (Comparison) Group (N= 10,319)*	*p Value*
Male gender (%)	39.9	39.3	.37
Non-Caucasian race/ethnicity (%)	13.6	13.5	.87
Age (%)			
18–4 years	25.5	26.1	.32
35–9 years	44.6	44.1	.42
50–4 years	29.8	29.8	.93
Chronic medical condition (%)	73.8	74.3	.47
Used outpatient mental health or substance abuse benefit (%)	17.6	17.8	.73
Average monthly use and expenditures			
Probability of use (%)	62.7	71.2	<.001
Expenditures per user ($)	397	547	<.001
Expenditures per person ($)	249	390	<.001

Chronic medical conditions were identified using primary diagnoses from the claims and encounter data. The list of conditions used is available from the author. Use and expenditure statistics are based on the twelve month pre-policy study period.

Table 3: Pre- to Post-Policy Percentage Change in Average Monthly Use and Expenditure for All Covered Services, Pharmacy, and All Other Medical Services

Service Type	*Probability of Use*	*p Value*	*Expenditures per User*	*p Value*	*Expenditures per Person*	*p Value*
All covered services						
Plus	0.3	.410	− 1.0	.58	− 0.7	.69
Standard	− 2.4	<.001	4.0	.10	1.4	.54
Difference-in-difference	− 2.7	<.001	5.0	.10	2.2	.47
Pharmacy						
Plus	− 1.9	.01	0.6	.72	− 1.3	.47
Standard	− 4.1	<.001	− 10.0	<.001	− 13.7	<.001
Difference-in-difference	− 2.2	.03	− 10.5	<.001	− 12.5	<.001
All other medical services						
Plus	1.0	.47	− 2.3	.28	− 1.3	.64
Standard	− 3.7	<.001	12.2	<.001	8.1	.007
Difference-in-difference	− 4.7	.002	14.9	<.001	9.5	.02

The (net) percentage changes presented are calculated directly from the coefficients of the regression equations with logged dependent variables (exponent of coefficient minus one). The difference-in-difference, which represents the net percentage change in the Standard group relative to the Plus group, is equal to the ratio of Standard to Plus full percentage changes (net percentage plus one). It is not equal to the difference between the Standard and Plus net percentage changes shown in the tables.

expenditures per person. Reduction in the likelihood of filling at least one prescription or using any other medical service in a month is also evident for the Standard group, yet expenditures diverge dramatically. Pharmacy expenditures per user decreased for the Standard group and, combined with the decrease in use, led to large reductions in expenditures per person. Alternatively, expenditures per user increased for all other medical services at almost three times the rate that use declined, resulting in a large increase in expenditures per person for the Standard group. The initial finding of no overall expenditure decrease reflects the weighted average of these opposing results by relative expenditure level.

All Other Medical Care (Nonpharmacy) by Service Type. Table 4 presents use and expenditure change for the five service categories other than pharmacy: inpatient, ambulatory (nonadmitted) emergency department, hospital outpatient, lab and radiology, and all other ambulatory care. Use and expenditures per person for inpatient care and hospital outpatient services by the Standard group increased relative to the Plus cohort. Alternatively, rates of use for emergency department services among Standard enrollees declined relative to the Plus enrollees. The reduction in emergency department use was met with increases in expenditures per user that resulted in no difference in expenditures per person.

Utilization and expenditures for all other ambulatory care followed a pattern similar to emergency department services, but the positive increase in expenditures per user was not statistically significant. Lab and radiology was the only service category in which there were no statistically significant differences in Standard and Plus use and expenditures.

Sensitivity Testing. The study results were found to be robust in comparison with the sensitivity testing results both in regard to benefit elimination and the comparison group tests. From a qualitative perspective, that is, based on the signs and significance of individual effects, identical conclusions would be drawn under all the alternative sampling schemes. We also conducted direct tests of the differences in the magnitude of effects relative to our main analysis. Among the 504 individual differences among coefficients through the seven sensitivity tests, 13 were found to be statistically significant at the 5 percent level, and two involved difference-in-difference coefficients. We conclude from these results that the study findings represent the effects of the

Table 4: Pre- to Post-Policy Percentage Change in Average Monthly Use and Expenditure for All Other (Nonpharmacy) Services by Service Type

Service Type	*Probability of Use*	*p Value*	*Expenditures per User*	*p Value*	*Expenditures per Person*	*p Value*
Inpatient						
Plus	−12.5	<.001	0.4	.92	−12.2	.02
Standard	11.4	.03	−5.4	.21	5.4	.44
Difference-in-difference	27.3	<.001	−5.7	.31	20.1	.03
Emergency department						
Plus	1.8	.51	6.3	.009	9.8	.008
Standard	−6.2	.01	14.7	<.001	7.6	.03
Difference-in-difference	−7.9	.03	7.9	.03	−2.0	.68
Hospital outpatient						
Plus	−9.6	<.001	2.6	.43	−7.3	.04
Standard	2.6	.06	8.2	.03	11.1	.002
Difference-in-difference	13.5	<.001	5.5	.27	19.7	<.001
Lab and radiology						
Plus	−6.2	<.001	11.9	<.001	5.0	.03
Standard	−3.0	<.001	8.7	<.001	5.4	.04
Difference-in-difference	3.3	.32	−2.9	.28	0.3	.92
All other ambulatory professional						
Plus	2.7	.14	10.0	<.001	13.0	<.001
Standard	−5.2	<.001	17.3	<.001	11.2	.01
Difference-in-difference	−7.7	<.001	6.6	.13	−1.5	.75

The (net) percentage changes presented are calculated directly from the coefficients of the regression equations with logged dependent variables (exponent of coefficient minus one). The difference-in-difference, which represents the net percentage change in the Standard group relative to the Plus group, is equal to the ratio of Standard to Plus full percentage changes (net percentage plus one). It is not equal to the difference between the Standard and Plus net percentage changes shown in the tables.

copayments and that any benefit elimination effects that may exist are likely focused within specific subpopulations.

DISCUSSION

Our results indicate that copayments for low-income adults in the OHP did not reduce expenditures for the remaining covered benefits as intended. The policy did reduce overall use of services, but in some cases shifted treatment patterns, such as the relative increase in inpatient care, in ways that are not inherently aligned with more cost-efficient or effective care. Overall, the study results suggest that both intended and unintended effects of copayments were

at play, and at the level of total expenditures canceled each other out. Effects within and among the specific service types are consistent with both unintended demand and supply-side effects.

The opposing effects of reduced use and expenditure for pharmacy and increased expenditures for all other medical care are strongly consistent with previously cited findings for drug copayments applied to welfare recipients in Quebec (Tamblyn et al. 2001), among Medicaid and Medicare recipients with capped drug benefits (Soumerai et al. 1991, 1994; Hsu et al. 2006b), among Canadians with drug cost-sharing generally (Anis et al. 2005), and for Medicaid copayments applied in California during the late 1970s (Helms, Newhouse, and Phelps 1978). Alternatively, reductions in use and expenditures have been generally found in prescription drug cost-sharing studies, regardless of whether offsets in other medical care have been measured or found (Gibson, Ozminkowski, and Goetzel 2005). Thus, a combination of intended and unintended effects of the drug copays is likely to have occurred. In particular, the copayment schedule for drugs by Oregon follows a "three tier" approach that provides incentives to choose less expensive preferred brands or generics. This approach has been found to generally reduce use and expenditures in its intended manner, as well as with potentially harmful termination of drug treatment occurring where more "aggressive" tiered copayments were applied (Huskamp et al. 2003).

Effects consistent with a counterbalancing of intended and unintended effects of copayments are evident in results for some of the specific service types. For both emergency department and all other ambulatory services significant reductions in use are evident but counterbalanced by increased expenditures per user such that expenditures per person remain unchanged. Research on copayments for emergency department services in commercial insurance environments has found reduced use and expenditures, no evidence of delayed care or other adverse events, and greater reductions in use for less serious conditions (O'Grady, et al. 1985; Selby, Fireman, and Swain 1996; Magid et al. 1997; Hsu et al. 2006a, Reed et al. 2005). A review of procedure codes for 15-, 30-, and 45-minute office visits and emergency services among the Standard enrollees indicates a marked increase in longer duration office visits and higher intensity emergency services after the policy change. A pattern indicating consumers have "selected" proportionally fewer less serious, less intensive, and less expensive emergency department or ambulatory visits are consistent with the intended effects of copayments. Proportional increases in more serious, intensive, and more expensive visits at a rate greater than expected from selection alone are, however, more consistent with unintended effects such as inappropriately delaying care.

Other results suggest the presence of supply or access effects due to the copayments. Hospital outpatient use increases while use of other ambulatory professional care declines. When all hospital-based services are combined (inpatient, emergency department, and hospital outpatient), use and expenditures increase overall. This may signal shifts toward organizations such as hospitals that may be more willing or able to forgo copayments. To the extent that hospital outpatient care is being substituted for nonhospital ambulatory care, the hospital-based care may still be appropriate and equally effective. However, it would not be cost-efficient as hospital outpatient care incurs facility charges in addition to physician fees, making it more expensive than office-based physician care, all else equal.

Our study has several limitations inherent to a natural experiment. Despite our sensitivity analyses, we cannot be sure that the OHP Plus enrollees provide an accurate comparison group. Specifically, we cannot be sure that the Plus group was not affected by the policy change as providers may not have distinguished between Standard and Plus enrollees. The sampling process also yielded subjects that were slightly older, more likely to have chronic physical or behavioral conditions, and had longer durations of enrollment than typical adult OHP Medicaid enrollees. While these members may not be fully representative of a typical Medicaid population, they do represent a disproportionate share of expenditures. Our expenditure measures were based on fee-for-service rates and thus do not reflect actual state expenditure levels, which include managed care organization capitation rates.

There was confusion and instability in the initial months of the policy, including 2 weeks in which the Standard pharmacy benefit was eliminated and then restored. Our findings may include residual implementation effects despite the exclusion of 3 months before and after the policy implementation. Many managed care organizations were wary of the policy expectations and stopped covering Standard beneficiaries. This may have caused disruptions in treatment access beyond the policy change itself. These and other unique aspects of the policy and its environment may limit the ability to generalize from these findings.

Although our study did not find reductions in expenditures for continuously covered benefits expected from applying copayments, the state did save money by directly shifting expenditures to consumers through the copayments on the remaining benefits and by the elimination of benefits itself. The copayments represented approximately 6 percent of expenditures for the Standard study sample in the postpolicy period. Using our study methodology applied to total program expenditures (i.e., expenditures for continuous and

eliminated benefits pre- and postpolicy), we found an expenditure reduction of 17.8 percent.

Copayments on medical services have generally worked well as a cost-saving device in commercially insured populations. If copayments are to be applied successfully in Medicaid programs, there is a clear need for a greater understanding of how they work in this context and greater attention paid to the details of copayment policies. Eliminating drug copayments, if they are more likely to cause cost-offsets, and/or establishing income-based limits on total copayments, might have reduced the unintended effects found in Oregon and allowed for the desired savings to occur. If copayments exacerbate the already endemic problems of treatment access experienced by most Medicaid enrollees, then it may be difficult to obtain savings from more efficient treatment use, regardless of the copayment structure. Without further information, state policy makers seeking to limit the growth of Medicaid expenditures, or seeking savings to expand coverage, should be wary of relying heavily on traditional, demand-side cost sharing, particularly when applied to very low-income beneficiaries.

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