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## **The Effects of Medicaid Policy Changes on Adults' Service Use Patterns in Kentucky and Idaho**

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**Background:** In 2006, Idaho and Kentucky became two of the first states to implement changes to their Medicaid programs under authority granted by the 2005 Deficit Reduction Act (DRA). The DRA granted new flexibility in the design of state Medicaid programs, including a state plan amendment (SPA) option for changes that previously would have required a waiver. This paper uses state Medicaid administrative data to analyze the impact of Medicaid policy changes implemented in these states through a series of SPAs in 2006 and 2007.

**Methods:** Changes in utilization are examined for multiple services, including physician, dental, and ER visits, inpatient stays, and prescriptions, among non-elderly adult Medicaid recipients following changes in cost sharing, reimbursement, service delivery, and covered services. Where possible, enrollees not affected by the changes served as a comparison group.

**Results:** While relatively few adults in Idaho received a wellness exam after such coverage was added, the adoption of managed care for dental services was associated with increased receipt of dental care, including preventive care. The new limits on brand name prescriptions in Kentucky were associated with a reduction in the proportion of enrollees with two or more monthly name brand prescriptions while the small copayments introduced did not appear to have a dramatic impact.

**Conclusions:** We find that changes in financial incentives on both the supply-side (such as reimbursement increases) and the demand-side (i.e., benefit changes) alone may not be enough to generate the desired levels of preventive care, especially among those with chronic health conditions.

**Keywords:** Medicaid and CHIP Payment Rates, Preventive Care, Incentives, Managed Care, Non-elderly Adults

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## Introduction

In 2006, Idaho and Kentucky became two of the first states in the nation to implement changes to their Medicaid programs under authority granted by the 2005 Deficit Reduction Act [DRA] (PL 109-171). The DRA, signed into law in February 2006, gave states new flexibility in the design of their Medicaid programs, allowing the use of a state plan amendment (SPA) for policy changes that previously would have required a waiver (Centers for Medicare & Medicaid Services, “The Deficit Reduction Act”).

Two key provisions of the DRA relate to changes in benefits and cost-sharing for enrollees. The DRA allows states to create benchmark benefit packages that offer different benefits to different categories of enrollees. The new cost-sharing rules in the DRA are described in Solomon (2007). Adult enrollees with income below the poverty line could be charged "nominal" levels of cost sharing for most services, while those with income between 100 percent and 150 percent of the FPL could be charged up to 10 percent of the cost of the service they receive, and those with income above 150 percent of the FPL could be charged up to 20 percent of the cost of the service. However, cost-sharing remains prohibited for emergency services, family planning services and supplies, preventive care services for children under age 18, and all services provided to certain mandatory eligibility groups. For beneficiaries who face cost-sharing requirements, total out-of-pocket spending may not exceed 5 percent of family income. An important change introduced in the DRA is that states are allowed to make cost-sharing enforceable for enrollees with income above 100 percent FPL, that is, the state may terminate coverage or the provider may deny services for failure to pay (Health Management Associates, 2007).

Concerns about Medicaid spending growth in both states led to a desire for Medicaid reform to make the programs sustainable for future generations, and to encourage greater use of preventive care and the adoption of healthier lifestyles. The Idaho policy initiative is known as *Modernizing Medicaid: Value-Based Reform* and the Kentucky policy initiative is known as *KyHealth Choices*. Both were approved through a series of SPAs allowing each state greater flexibility in benefit design, cost-sharing, and initiatives designed to coordinate care, promote healthy behavior, and manage chronic diseases. Because these were two of the first states to use the DRA provisions to redesign Medicaid to function more like commercial insurance and to focus more on prevention and wellness, an analysis of their experiences could be useful to other states that may be looking to introduce similar policy changes.<sup>1</sup>

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<sup>1</sup>Historically, both states have relied more heavily on non-capitated managed care in Medicaid, are more rural, and have a larger share of their population comprised of non-Hispanic Whites. Unfortunately, lags in data availability and gaps in Medicaid encounter data precluded us from using Medicaid enrollees from other states as controls.

Under the Maintenance of Effort provisions in the health care reform law (Patient Protection and Affordable Care Act PL 111-148) or Affordable Care Act (ACA), states are limited in their ability to adjust Medicaid eligibility rules or enrollment procedures in order to address budgetary pressures, but do allow for changes in reimbursement rates to providers, benefits, and copayments for certain types of recipients. In February 2011, the Centers for Medicare & Medicaid Services (CMS) sent a letter to each state Medicaid director in order to provide guidance on the Maintenance of Effort (MOE) provisions in the ACA (Mann, C., 2011, February 25, Mann to State Medicaid Director). CMS recently clarified the implications of the Supreme Court ruling for the MOE provisions in a letter sent to the head of the Republican Governors Association (Tavener, M., 2012, July 13, Tavener to Honorable Robert McDonnell).

The purpose of this paper is to examine the impact of the policy changes in Idaho and Kentucky on utilization rates for a variety of services, including physician visits, dental visits, emergency room (ER) visits, inpatient stays, and prescription drugs, among non-elderly adult Medicaid recipients. In addition, we examine new preventive benefits provided in Idaho for weight loss and smoking cessation. We hypothesize that the reimbursement increases, newly covered services, and delivery system changes could increase receipt of care among enrollees due to increased provider willingness to serve Medicaid-covered patients and the availability of the newly covered services. At the same time, there is a body of research suggesting that cost-sharing can create barriers to obtaining services (Hudman & O'Malley, 2003). Therefore, service limits and increases in cost-sharing through new copayments are hypothesized to reduce receipt of care.

## **Background**

The DRA-related policy changes made in Idaho and Kentucky are summarized in Exhibit 1 in three broad categories: increases in cost-sharing, increases in reimbursement rates, and changes in service delivery and covered services (service limits on prescriptions in Kentucky represent a reduction in covered services, while the addition of preventive services and the new preventive health assistance benefits in Idaho represent an increase in covered services).

Both states used the DRA authority to create benchmark benefit packages that offer specific benefits to different categories of enrollees. In July 2006, when the benchmark plans were introduced, healthy, non-disabled adults in Idaho were placed in the Basic Plan while disabled adults eligible under Supplemental Security Income (SSI), and those with high health care needs, were placed in the Enhanced Plan that offers greater coverage of behavioral and mental health services (Kenney & Pelletier, 2010). Kentucky also used differences in health needs as the basis of placing different groups of enrollees into different benefit packages. Most adults, typically the healthy and non-disabled, were placed in the Global Choices plan, which is similar to Idaho's Basic Plan (Kenney, Pelletier, & Costich, 2010).

**Exhibit 1. Key Medicaid Policy Changes for Non-elderly Adults in Idaho and Kentucky, 2006–2007**

Effective Date	Policy Change
July 2006	Kentucky
	Monthly service limits on prescription drugs (4/month, max. 1 brand name) implemented
	Copayments for physician services (\$3–6), prescription drugs (\$1–3), and inpatient hospital stays (\$50) implemented
July 2007	Idaho
	Annual wellness exam and cancer screenings added to adult benefit packages
	Tobacco Cessation and Weight Management Preventive Health Assistance benefits become available to adults who qualify
Sept 2007	Kentucky
	Reimbursement rates for preventive and E&M codes increased
Sept 2007	Idaho
	Dental coverage for non-disabled enrollees outsourced to a Managed Care Organization and reimbursement rates for adults' services were increased by an average of 3.9%

SOURCE: Kenney, Pelletier, & Costich (2010); Kenney & Pelletier (2010).

Both Idaho plans added an annual wellness exam and cancer screenings that were previously not covered for adults in Medicaid. Idaho also introduced Preventive Health Assistance benefits in January 2007. Children and adults who have a body mass index of less than 18.5 or greater than 30 could qualify for the Weight Management benefit, which provides up to \$200 per year to help pay for weight management programs, fitness classes, and diet/nutrition education. Smokers and other tobacco users who want to quit could qualify for up to \$200 per year to pay for nicotine replacement and other quit aids. Participants must return a form to Medicaid indicating their interest in the program and they must reapply (and meet all qualification requirements) every year.

In September 2007, Idaho contracted with a Managed Care Organization (MCO) to provide dental services to its non-disabled population under a new capitated program named *Idaho Smiles*. The MCO initially increased provider fees for adults' services by an average of 3.9 percent and in 2008 increased average fees another 3.2 percent (Kenney & Pelletier, 2010). According to the Idaho Department of Health and Welfare, the number of private practice dentists that accept Medicaid patients has reportedly increased by 22 percent since the program was introduced (Kenney & Pelletier, 2010).

Kentucky also changed reimbursement rates for some services. Preventive office visit reimbursement rates for non-elderly adults were increased between 12.50 percent and 19.14 percent in 2007 and between 6.74 and 24.99 percent in 2008, with the specific increase depending upon the age of the patient and whether or not they were a new patient (Kentucky

Medicaid Fee and Rate Schedules, 2009). In 2008, Medicaid reimbursement rates for all primary care services in Kentucky were 15 percent greater than the national average (Zuckerman, Williams, & Stockley, 2009). While both states had the option of increasing cost-sharing, only Kentucky opted to do so.

The July 2006 policy changes in Kentucky Medicaid included the introduction of copayments and service limits for a variety of services (Kenney et al., 2010). A \$50 copayment was introduced for inpatient hospitalizations as well as a 5 percent coinsurance rate for non-emergency use of the ER (with a modest \$6 maximum). A new four prescription per month service limit was imposed on prescriptions, with a limit of one brand name prescription per month, although the limits were not hard limits and thus could be overridden. In addition, \$1–\$3 copayments for prescriptions were introduced. Finally, \$3–\$6 copayments for physician visits were also introduced. It is important to note that Kentucky originally proposed higher prescription copayments (\$5–\$15) and a larger penalty for non-emergency use of the ER. According to Seckel (2006), these higher cost sharing levels were not implemented due to the likelihood that higher copayments would exceed federal beneficiary out-of-pocket limits, and due to the stated concerns about financial burdens from the advocacy community within the state.

## Literature Review

There is extensive literature examining the impacts of Medicaid policy changes relating to cost sharing, reimbursement rates, service delivery, and covered services. The findings from this prior literature are mixed, likely because of differences in timing and context, as well as differences in methodological approach across the studies.

Studies examining the impact of increases in cost-sharing typically find a negative impact on utilization of services, though these results may differ for different types of services. Hudman and O'Malley (2003) summarized a large body of research suggesting that cost-sharing can create barriers to obtaining services. For example, studies analyzing the implementation of copayments in California's Medicaid program in the early 1970s (Brian & Gibbens, 1974; Roemer et al., 1975), found that even small copayments resulted in reductions in physician visits and preventive care. Several studies, including Soumerai, Avorn, Ross-Degnan, and Gortmaker (1987), Stuart and Zacker (1999), Hartung et al. (2008), and Farley (2010), found negative impacts from Medicaid prescription copayments on prescription utilization. Mortensen (2010) examined the impact of changes in nine states' Medicaid copayment policies on ER utilization and did not find that requiring modest (\$3–\$15) copayments for nonemergency ER visits decreased ER use among Medicaid enrollees. In contrast, analysis by Lowe, McConnell, Vogt, and Smith (2008) found that more substantial copayments of \$50 reduced ER utilization among Medicaid recipients in Oregon.

Increases in Medicaid reimbursement rates have been shown to be related to increases in access to providers, though the magnitude of this relationship is the subject of some debate in the literature. Shen and Zuckerman (2005) found that higher Medicaid reimbursement rates increased the probability of having at least one office visit for adults and produced positive evaluations of the health care received by adults and children, but had no effect on the receipt of preventive care, the probability of having unmet needs, or at least one dental visit. Decker (2009) found a significant relationship between Medicaid physician reimbursement rates and receipt of care among Medicaid-covered children. Her research suggests a stronger relationship between Medicaid payment rates and access than has been found in previous national studies (Hadley, 1979; Zuckerman, McFeeters, Cunningham, Nichols, 2004; Decker, 2007). DeVoe, Fryer, Phillips, & Green (2003) found that receipt of preventive services among adults was strongly associated with insurance, which suggests that the new coverage of preventive services in Idaho may have a positive impact on utilization.

Several studies have examined the impact of Medicaid managed care on dental utilization, finding mixed results. In a national study, Zuckerman, Brennan, and Yemane (2002) found that adults in mandatory Medicaid HMOs were less likely to have had a dental visit and more likely to have had unmet dental needs. In contrast, Coughlin and Long (2000) did not find a difference in adult dental care utilization when comparing Medicaid managed care recipients with fee-for-service Medicaid recipients in Minnesota.

Finally, there is little conclusive empirical evidence on the effectiveness of the types of weight loss programs subsidized in Idaho through the introduction of their Preventive Health Assistance benefits. As discussed in Cawley (2007), information is lacking on about what works to prevent or reduce childhood obesity. Tsai and Wadden (2005) provide an evaluation of major commercial weight loss programs in the United States and conclude that with the exception of one intervention, the evidence to support the use of such programs is “suboptimal.” The authors call for controlled trials to better assess these programs. The literature on smoking cessation programs is more consistent. In a review of such programs, Kahende, Loomis, Adhikari, and Marshall (2009) concluded that the evidence is clear that tobacco cessation interventions are highly cost-effective, though more work needs to be done to rigorously evaluate particular programs.

## **Data and Methods**

### **Data**

The analysis draws primarily on Medicaid enrollment and claims data in Idaho and Kentucky from the periods before and after the policy changes were introduced to assess effects (2004–2008). In both states, the study population is restricted to non-institutionalized, non-elderly adults (aged 18–64) who have comprehensive Medicaid benefits and are not dually enrolled in Medicare. Claims data were merged with monthly enrollment files using encrypted identifiers.

In Idaho, Current Procedural Terminology (CPT) and Healthcare Common Procedure Coding System (HCPCS) codes were examined to determine whether an adult received a preventive physician visit, an outpatient dental visit, or a preventive dental visit in each month of enrollment (Current Procedural Terminology, Professional Edition, 2010; HCPCS Level II, Professional Edition, 2010).<sup>2</sup> The MCO contracted to provide dental care in Idaho was required by the state to provide encounter data, which is included in the claims data described above.

Adults who only received services at federally-qualified health centers (FQHCs) and rural health centers are dropped from the analysis in Idaho, constituting approximately 8.5 percent of the observations in each of the physician visit and dental visit analyses, due to the absence of claims data for these Idaho providers. In addition, any person-months with missing values for variables of interest (demographics, aid category, and benefit package) are dropped, as well as person-months with dual Medicare coverage. For preventive physician visits, we analyze the time period after such visits were covered under Medicaid in Idaho (July 2006 to June 2008). For dental visits, the pre-period is from September 2004 to August 2007 and the post-period is from September 2007 to August 2008. Only adults who were enrolled for a full 12-month period are included in the analysis (24,008 person-years in the preventive physician visit dataset and 50,189 person-years in the dental visit dataset). It should be noted that the sample size for the Idaho preventive physician visit dataset is smaller than the dental visit dataset, because Medicaid coverage for an annual preventive physician visit in Idaho was only available for adults starting in July 2006. Therefore, the analysis of preventive physician visits only uses post-reform data.

In Kentucky, all person-years of Medicaid managed care coverage are dropped because the policy changes did not apply to the Louisville-based managed care program. These person-years constituted 16.28 percent of the sample of all non-elderly adult person-years with no missing values. Therefore, our final sample for Kentucky consists of 341,367 person-years, with the pre-period of July 2004 to June 2006 and the post-period of July 2006 to June 2008.

We restrict our attention to the continuously enrolled for several reasons. This is the best way to ensure we are accurately observing all medical care utilization of those in the sample. For adults, many measures of utilization are recommended to happen on an annual (rather than a monthly) basis, such as an annual wellness exam or dental checkup. Finally, our focus on 12 months of continuous coverage mimics the standard approach taken in HEDIS measures of quality.

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<sup>2</sup>The CPT codes used to identify preventive physician visits were any in the ranges 99381–99387 and 99391–99397. The HCPCS codes used to identify dental visits were any in the ranges D0120–D0999, D1110–D2999, D3110–D3999, D4210–D4999, D5110–D5899, D6010–D6205, D7111–D7999, D8010–D8999, and D9110–D9999. The HCPCS codes used to identify preventive dental visits were any in the ranges D1000–D1999. CPT only copyright 2009 American Medical Association. All rights reserved.

## Methods

Because preventive physician visits and the Preventive Health Assistance benefits were not covered benefits in Idaho for adults prior to July 2006, we examine characteristics of adults utilizing these benefits once they became available. Statistics related to the Preventive Health Assistance benefits program in Idaho were provided by officials in the Idaho Medicaid Program. We use a pre-post model with a comparison group to examine the impact of the dental policy changes in Idaho, using SSI adults who were not transitioned into managed care during the analysis period as the comparison group, and we use pre-post models with enrollee fixed effects to examine the impact of the Kentucky policy changes. SSI adults are not an ideal comparison group for our Idaho analysis, but it is the best available in the administrative data analyzed. In order to make the SSI adults as comparable as possible, we excluded all elderly SSI recipients from the analysis.

### *Logistic Models*

We derive marginal effects based on logistic models using our Idaho dataset for (1) the probability of any annual outpatient dental visit, and (2) the probability of any annual preventive dental visit, using SSI adults as a comparison group. The key independent variable in these models is an interaction between a time-invariant indicator equal to one if the recipient is ever eligible for the dental managed care program (this is always equal to zero for SSI recipients) and a time varying indicator that equals one in the time period after the managed care program is in place. In this standard difference-in-differences model, the coefficient on the interaction described above measures the differential impact of Idaho's dental managed care program on those mandated to enroll as compared to the SSI controls.

In Kentucky, we derive marginal effects based on linear probability models with enrollee fixed effects for (1) the probability of any annual physician visits, (2) the probability of any annual ER visits, (3) the probability of any annual inpatient stays, and (4) the probability of any annual prescriptions. We estimate linear probability models here, because it is more straightforward to include enrollee fixed effects in linear probability models as compared to logistic or probit models. The key independent variable in these models is a time varying indicator that equals one in the time period after the reforms were implemented. Because the service limits for prescriptions in Kentucky were defined on the basis of the number of monthly prescriptions, we converted the Kentucky dataset from annual observations to monthly observations so that we could examine the impact of the service limits on the number of monthly prescriptions filled by each enrollee. We estimate linear probability models with enrollee fixed effects to examine the impact of the policy changes on the likelihood of having two or more monthly name-brand prescriptions and the likelihood of having five or more total monthly prescriptions.

In both states, we also control for a vector of demographic and other characteristics available in the state administrative data (three categories of age (19–34, 35–49, 50–64), a female

indicator, a non-White indicator, region of residence indicators (in Idaho) or an indicator for living in an urban area (Kentucky), a vector of eligibility category indicators (SSI/Enhanced Plan or TANF/Basic Plan), and (in Idaho only) an indicator for whether the adult had any care at a community health center or rural health center.<sup>3</sup> In both states, we define non-White children as those not classified as "White" in the state eligibility database. Therefore, non-White children may be Asian or Pacific Islander, Black, Hispanic, American Indian or Alaskan native, Native Hawaiian, or classified as having an "other" race or ethnicity.

**Exhibit 2. Descriptive Statistics for Analysis Samples in Kentucky and Idaho**

	Kentucky Sample	Idaho Preventive Physician Visit Sample	Idaho Dental Visit Sample
Sample Size (person-years)§	341,367	24,008	50,189
From TANF	31.14%	40.57%	45.75%
From non-elderly SSI	68.86%	59.43%	54.25%
Female	64.54%	72.60%	73.12%
Male	35.46%	27.40%	26.88%
Non-White	5.75%	5.13%	4.82%
White	94.25%	94.87%	95.18%
Age 19–34	34.83%	45.63%	47.63%
Age 35–49	38.16%	32.92%	32.94%
Age 50–64	27.01%	21.45%	19.44%
Metro	22.43%	N/A	N/A
Non-Metro	77.57%	N/A	N/A
No FQHC visits in year ‡	N/A	67.09%	68.69%
Any FQHC visit in year	N/A	32.91%	31.31%

NOTE. Percents are calculated by person-year, so adults enrolled in more than one year contribute more than one observation to the estimates. ‡ Federally-Qualified Health Center § The sample size for the physician visit sample in Idaho is smaller than the sample size for the dental visit sample, because preventive physician visits were not covered in Idaho prior to July 2006.

SOURCE: State Medicaid claims and enrollment files, 2004–2008.

Exhibit 2 provides descriptive statistics for the samples of non-institutionalized, non-elderly adult Medicaid recipients analyzed in each state. It appears as though Kentucky has a larger

<sup>3</sup>As mentioned in the data sub-section, adults who ONLY received services at FQHCs and rural health centers in Idaho are dropped from the analysis. This implies that there are adults in the Idaho sample that received some services at FQHCs and rural health centers and others that did not. We include an indicator to control for this difference.

percentage of non-elderly SSI recipients among the Medicaid-covered adults in the analysis sample as compared to either of the Idaho analysis samples (69 percent versus 59 percent or 54 percent). Idaho has a larger percentage of younger and female recipients. All samples appear to have similar racial composition, with 5–6 percent non-White recipients.

## Results

### Idaho

After introduction of the wellness benefit for adults in Idaho, about 9 percent of adults enrolled in the post- period received an annual preventive physician visit (2,136 adults out of a total of 24,008 enrolled). Exhibit 3 describes the demographics of those adults. Younger adults, females and those eligible under TANF had higher rates of preventive visits in Idaho in the post- period as compared to older adults, males, and those eligible under the SSI program. Particularly notable is the very low rates of preventive visits among men (1.7 percent, or 112 males out of a total of 6,579 enrolled in the post-reform time period). There is also variation by region of residence, with rates ranging from 5.6 percent to 15.6 percent (not reported). Similarly, despite coverage for preventive physician visits in Kentucky, only about 13 percent of adults received an annual preventive visit. Thus, utilization for these preventive services is well below targeted values in each state.

Assuming that more than three percent of non-elderly Medicaid-covered adults in Idaho are either smokers or obese/underweight, or both, participation in the preventive health assistance benefits in Idaho could be characterized as low: in 2009, 1,061 people participated in the weight management benefit and 361 people participated (including both adults and children) in the tobacco cessation benefit, out of about a total of 50,000 adult enrollees (data not shown). Since we do not know how many of these 50,000 adult enrollees qualified for the two preventive health assistance benefits, we cannot directly measure take up conditional on eligibility, even though such a take up rate would be important in evaluating the impact of such benefits over time. The state conducted a small survey of participants, which resulted in 56 respondents to the weight management survey and 39 respondents to the tobacco cessation survey. While the sample sizes are very small and the response rate was just 54%, the majority of respondents reported that they gained/lost weight as intended on the weight management program (88%, 95% C.I. 76%–95%). Fewer respondents reported successfully quitting smoking as a result of their participation in the tobacco cessation program (20%, 95% C.I. 10%–38%). Other information on the survey suggests that this could relate to the limited nature of the benefit, which is restricted to \$200 annually, which does not always cover the full treatment of tobacco cessation drugs (McMenamin, Halpin, & Ingram, 2010). No quantitative information is available on the extent of changes in the weight or smoking behavior among those who received preventive health assistance benefits.

The descriptive analysis presented in Exhibit 4 illustrates that, prior to the introduction of managed care for dental services in Idaho, 45.5 percent of adults had received any annual dental visit and 21.8 percent had received an annual preventive dental visit. These rates increased to 48.0 percent and 24.2 percent, respectively, in the post period ( $p < .01$ ). Our

**Exhibit 3. Descriptive Analysis of Receipt of Preventive Physician Visits in Idaho Post Reform.**

	Number of Recipients with a Visit	Number of Recipients Total	Percent of Recipients with a Visit	
Total (person-years)	2,136	24,008	8.90	
From TANF	1,114	9,740	11.44	
From non-elderly SSI	1,022	14,268	7.16	
Female	2,024	17,429	11.61	
Male	112	6,579	1.70	
Non-White	95	1,231	7.72	\$\$
White	2,041	22,777	8.96	
Age 19–34	1,161	10,955	10.60	\$\$
Age 35–49	700	7,904	8.86	
Age 50–64	275	5,149	5.34	
Metro	N/A	N/A	N/A	
Non-Metro	N/A	N/A	N/A	
No FQHC visits in year ‡	1,657	16,108	10.29	\$
Any FQHC visit in year	479	7,900	6.06	\$\$

NOTE. Percents are calculated by person-year, so adults enrolled in more than one year contribute more than one observation to the estimates.

‡ Federally-Qualified Health Center

§ p-value difference from reference group (age 19–34, SSI, Male, White Non-Hispanic, Region 1, No FQHC visits)  $< .05$ .

\$\$ p-value difference from reference group (age 19–34, SSI, Male, White Non-Hispanic, Region 1, No FQHC visits)  $< .01$ .

SOURCE: State Medicaid claims and enrollment files, 2006–2008.

multivariate difference-in-difference analysis in Exhibit 5 suggests that the move to managed care for dental services in Idaho resulted in a 5.4 percentage point increase ( $p < .01$ ) in the probability of receiving any annual dental visit (a 12 percent increase) and a 2 percentage point increase ( $p = .029$ ) in the probability of receiving any annual preventive dental visit (a 9 percent increase) among non-disabled adults targeted by the policy change. Simple pre-post models for the dental outcomes showed the same direction of effects, with slightly smaller impacts found for any dental care and slightly larger impacts found for preventive dental care.

## Kentucky

Exhibit 4 suggests that the new cost-sharing requirements and service limits in Kentucky may not have had a substantial impact on annual utilization rates in the post period. The only statistically significant change observed in the annual utilization rates is a slight reduction in the probability of having any annual inpatient stays (from 18 percent to 17.64 percent,

$p < .01$ ). Exhibit 4 also shows that the probability of having two or more monthly name-brand prescriptions falls by about 4 percentage points ( $p < .01$ ) after the restriction to a maximum of one name-brand per month was implemented. The proportion with five or more monthly

**Exhibit 4. Descriptive Analysis of Receipt of Care in Idaho and Kentucky Before and After Reforms**

	Sample Size	Pre- Reform (%)	Post- Reform (%)
Idaho			
Any Annual Dental Visit	50,189	45.5	48.0 ***
Any Annual Preventive Dental Visit	50,189	21.8	24.2 ***
Any Annual Preventive Physician Visit	24,008	N/A	8.9
Kentucky			
Any Annual Physician Visit	341,367	86.6	86.5
Any Annual ER Visit	341,367	51.5	52.5
Any Annual Inpatient Stay	341,367	18.0	17.6 ***
Any Annual Prescriptions	341,367	90.6	90.5
Percentage with 5 or More Monthly Prescriptions	4,096,404	30.0	30.5 ***
Percentage with 2 or More Monthly Name Brand Prescriptions	4,096,404	30.6	26.5 ***

NOTE. Percents are calculated by person-year or person-month, so adults enrolled in more than one year contribute more than one observation to the estimates. For the annual analysis, sample size is measured in person-years while for the monthly prescription analysis, sample size is measured in person-months.

\*p-value difference between pre-reform and post-reform  $< .10$ .

\*\*p-value difference between pre-reform and post-reform  $< .05$ .

\*\*\*p-value difference between pre-reform and post-reform  $< .01$ .

SOURCE: State Medicaid claims and enrollment files, 2004–2008.

prescriptions increased by a half a percentage point ( $p < .01$ ) despite the restriction to a maximum of four prescriptions per month.

Our multivariate pre-post modeling of annual utilization rates in Kentucky, like the descriptive analysis, suggests that the new cost-sharing requirements and service limits did not appear to have a noticeable impact (Exhibit 5). We do find a 0.1 percentage point reduction in the probability of having any annual inpatient stays (a .56 percent decrease), though this coefficient is not statistically significant. We also find a statistically significant 0.4 percentage point (.46 percent) increase in the probability of having any physician visit ( $p < .01$ ) and a .3 percentage point (.33 percent) increase in the probability of having any monthly prescriptions.

In addition, we split the two-year post period indicator into separate fiscal year 2007 and fiscal year 2008 indicators in our analysis of annual physician visit utilization rates in an attempt to separate the impact of the physician visit copayments introduced in fiscal year 2007 from the reimbursement rate increases introduced in fiscal year 2008. In this alternative specification we still do not find a noticeable impact of the new physician visit copayment in fiscal year 2007, but we do find a .7 percentage point (3 percent) increase in the probability of having any physician

visit in fiscal year 2008. This is suggestive of a positive impact of reimbursement rate increases on the utilization of physician visits.

**Exhibit 5. Impact of Policy Changes on Receipt of Care in Idaho and Kentucky**

<i>Any Annual Utilization Analysis</i>	Marginal Effect	SE	p-value	Comparison Group
Idaho				
Any Dental Visit	0.054	0.0115	<.001	SSI/Enhanced
Any Preventive Dental Visit	0.020	0.0092	0.029	SSI/Enhanced
Kentucky—2 year post period (July 2006–June 2008)				
Any Physician Visit	0.004	0.0011	<.001	N/A
Any ER Visit	0.003	0.0017	0.113	N/A
Any Inpatient Stay	-0.001	0.0014	0.419	N/A
Any Prescriptions	0.003	0.0009	0.005	N/A
Kentucky - split post period for Physician visit analysis				
Any Physician Visit - July 2006–June 2007	0.002	0.0012	0.080	N/A
July 2007–June 2008	0.007	0.0013	0.000	N/A
<i>Monthly Prescription Analysis</i>	Marginal Effect	SE	p-value	Comparison Group
Kentucky				
Percentage with 5 or More Monthly Prescriptions	0.032	0.0008	<.001	N/A
Percentage with 2 or More Monthly Name Brand Prescriptions	-0.014	0.0008	<.001	N/A

NOTE: The Kentucky models include enrollee fixed effects.

SOURCE: State Medicaid claims and enrollment files, 2004–2008.

Our monthly analysis of prescription utilization in Kentucky suggests that the July 2006 service limits led to a 1.4 percentage point (5 percent) reduction in the probability of having two or more monthly name brand prescriptions ( $p < .01$ ). On the other hand, despite the new copayments and the restriction to a maximum of four total prescriptions per month, we observe a 3.2 percentage point (11 percent) increase in the probability of having five or more monthly prescriptions ( $p < .01$ ).

## Discussion

The addition of the annual wellness exam and preventive health assistance benefit for adults appear likely to have had only small impacts on preventive care receipt and health behaviors among adults in Idaho, given how few enrollees received those benefits. While only a limited amount of information is available to form the basis for conclusions about the Preventive Health Assistance Benefits Program, the information that is available suggests that the weight management program may have had a greater impact than the tobacco cessation program both

in terms of a larger number of participants and a higher success rate reported by program participants.

However, the limited benefit structure in both programs likely constrains the ability to encourage widespread behavior change. For instance, participants must re-qualify for the weight management program every year, which includes having a body mass index in the obese or underweight range. Participants who are successful at losing weight will therefore not qualify for the program the following year, inhibiting them from receiving Medicaid funds to continue their weight-loss programs and gym memberships. In terms of the tobacco cessation benefit, the fact that the program is capped at a dollar amount that does not cover a full course of pharmacotherapy may limit the potential of this program to assist participants in successfully quitting tobacco use. Some states offer full coverage of tobacco cessation aids to all Medicaid beneficiaries, which may be more effective at getting smokers to quit. In addition, the ACA requires health plans, starting as early as 2010, to cover certain preventive services without cost-sharing for certain groups of enrollees. Those newly eligible for Medicaid and those gaining coverage through state exchanges in 2014 must be provided with tobacco cessation coverage as part of the “Essential Health Benefits Package.” Therefore, in coming years, depending on an individual's age and health plan type, he or she may have easier access to obesity screening, counseling to promote sustained weight loss, and tobacco cessation interventions, such as counseling or medication to assist them in quitting tobacco use.<sup>4</sup> In addition, the ACA included grant funding to states through the Medicaid Incentives for Prevention of Chronic Diseases Program to test the effects of incentives to encourage greater participation in prevention programs and the adoption of healthy behaviors, such as tobacco cessation and weight management.<sup>5</sup> These new initiatives should provide additional guidance to states that want to address these issues in their Medicaid programs.

The move to managed care for dental services and the associated increases in reimbursement rates appear to have increased receipt of dental services, including preventive dental services, among adults in Idaho. While it appears that the share of adults receiving dental services continued to increase after the analysis period, preventive dental receipt has remained below recommended levels.<sup>6</sup> In addition, budget pressures led the Idaho Medicaid program to reduce dental benefits in July of 2011, for all adult groups but pregnant women, to include just urgent/emergency care.<sup>7</sup> Our finding that Kentucky Medicaid reimbursement rate increases, introduced in fiscal year 2008, were associated with increases in physician visit utilization

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<sup>4</sup>For more information, see: <http://www.healthcare.gov/law/provisions/preventive/moreinfo.html>

<sup>5</sup>For more information, see: <http://www.cms.gov/MIPCD/>

<sup>6</sup>The information regarding continued increases in the share of adults receiving dental services came from direct communication with an official with the Managed Care Organization contracted to provide dental care in Idaho.

<sup>7</sup>For more information, see the following Web sites:

[http://healthandwelfare.idaho.gov/LinkClick.aspx?fileticket=CKIc\\_w1p0NI%3d&tabid=123&mid=1159](http://healthandwelfare.idaho.gov/LinkClick.aspx?fileticket=CKIc_w1p0NI%3d&tabid=123&mid=1159)

<http://healthandwelfare.idaho.gov/Portals/0/Providers/Medicaid/MA11-13.pdf>

[http://www.dentaquestgov.com/Members/Documents/ID/Idaho\\_Smiles\\_Member\\_Handbook.pdf](http://www.dentaquestgov.com/Members/Documents/ID/Idaho_Smiles_Member_Handbook.pdf)

mirrors the broader literature on Medicaid reimbursement rates (Shen & Zuckerman, 2005; Decker, 2009).

It appears that the monthly limit that was introduced on brand name drugs in Kentucky was associated with a reduction in the share of enrollees with two or more brand name prescriptions and a small increase in the probability of having five or more monthly prescriptions. There are a number of possible explanations for this finding. First, some brand name drugs are actually combinations of two generic drugs, so if the brand name limit leads an enrollee to drop this sort of brand name drug, they would have to take two separate drugs to replace it. For example, the brand name drug Lotrel used to treat hypertension is a combination of the generics Benazepril (an ACE inhibitor) and Amlodipine (a calcium channel blocker). Second, dropping a brand name drug may lead a prescriber to experiment with different generic drugs to take its place before settling on an equivalent replacement. For example, an enrollee may have been on the brand name drug Crestor (rosuvastatin) to treat high cholesterol, but switched to a generic such as Simvastatin in order to comply with the brand name limit. If that generic doesn't seem to work as well or presents unwanted side-effects, they may opt to try a different one, such as Atorvastatin. In the short term, this may cause an increase in the overall number of medications for those patients, but may still result in savings given that generic drugs are typically less costly than brand name drugs.

Although somewhat inconsistent with the general literature on cost-sharing (Hudman & O'Malley, 2003; Brian & Gibbens, 1974; Roemer et al., 1975; Stuart & Zacker, 1999; Lowe et al., 2008), there are several possible explanations for our finding of little impact of the new copayments on the utilization of other services in Kentucky. As indicated above, the reimbursement increases that were introduced one year later may have neutralized negative effects of the copayments. In addition, the extent to which these copayments were actually collected by providers at the point of service is not clear. In general, Medicaid providers are responsible for collecting copayments and in Kentucky, Medicaid reduced reimbursement levels by the copayment amount under the assumption that the copayment is paid to the provider. This shifts some of the financial risk to the provider, as well as potential responsibility for monitoring cost sharing totals relative to out-of-pocket maximums. The fact that copayments may be waived for certain services or certain enrollees also introduces complexities for providers.

The available administrative data did not allow us to assess the extent to which providers were collecting copayments. In addition, data were not available to track out-of-pocket limits for adults / families with different income levels to evaluate whether or not out-of-pocket maximums were being reached. If providers were not persistent in collecting copayments, then we would not expect a price response on the part of the enrollees, because from their perspective there was no price increase. A second possible explanation is that providers were successful at collecting copayments, but the copayments were sufficiently small (recall they were smaller than

initially planned), so they did not have a large impact on utilization patterns. Without additional data, these competing explanations cannot be evaluated.

### **Looking Ahead**

A discussion of Kentucky Medicaid would be incomplete without mentioning the expansion of Medicaid managed care in late 2011 across Kentucky, which was implemented with the goal of reducing costs under the Medicaid program. The statewide managed care program constitutes a major expansion from the current program focused in the Louisville area and surrounding counties. Such a shift represents a much more fundamental change of the Medicaid system in Kentucky than the policy changes analyzed here.

In addition, to the extent that Kentucky and Idaho expand Medicaid eligibility under the ACA, they are projected to experience large increases in Medicaid enrollment, which raises questions about the capacity of their service delivery systems to meet the greater demand for care under Medicaid. Ku, Jones, Shin, Bruen, and Hayes (2011) analyze this issue and rank Kentucky as having the 8th lowest relative primary care capacity, while Idaho ranks in the middle of the pack at 24<sup>th</sup> relative to the expected Medicaid enrollment increases.

### **Limitations**

This analysis is subject to a number of limitations. First, with the exception of the dental analysis for Idaho, the structure of the policy changes did not allow us to construct reliable comparison groups with which to compare to those affected by the policy changes. Our pre-post design with fixed effects may not adequately control for confounding changes that might have been occurring at the same time as the reforms, such as changes in case mix or service delivery. Previous case study work in each state (Kenney & Pelletier, 2010; Kenney et al., 2010) did not suggest the existence of any major confounding changes, but that possibility cannot be ruled out. Second, the health care utilization of adults who are served exclusively by community health centers and rural health clinics in Idaho could not be observed due to the lack of claims data associated with these provider types. Third, our post-time period is relatively short, so any changes that we observe should likely be interpreted as short-run impacts. Fourth, our measurement of preventive services may be done with error if providers do not consistently code claims as being associated with preventive care and they may not always have a financial incentive to do so.

Fifth, as discussed above, it is not clear how successfully Kentucky Medicaid providers collected the new copayments. If the copayments were not regularly collected, then that could explain our finding of little impact of copayments on utilization. While this is a limitation of our research, it could also be considered a limitation of the policy change itself. Initiating the collection of variable copayments at the provider level for different services that are subject to individual and family out-of-pocket limits is not an easy task. Selden, Kenney, Pantell, and

Ruhter (2009) analyze cost-sharing in Medicaid and CHIP and highlight the importance of implementing income-based caps on family spending, which requires tracking out-of-pocket spending burdens in order to reduce the financial burden placed on low-income families.

## Conclusions and Policy Implications

Idaho and Kentucky were two of the first states to take advantage of the DRA provisions to redesign Medicaid to function more like commercial insurance and focus on prevention and wellness. Thus, despite the limitations described above, this analysis of their experiences should be useful to other states that may be looking to introduce similar policy changes. The ACA contains many provisions that are related to the policies analyzed in this paper. One ACA provision includes a one percentage point increase in federal Medicaid matching rates to cover (with no cost-sharing) preventive services recommended by the U.S. Preventive Services Task Force starting in 2013.<sup>8</sup> In addition, Community Transformation Grant funding will be made available by the Secretary of Health and Human Services to state and local agencies and community-based organizations for wellness programs such as smoking cessation and weight management.<sup>9</sup> Our results from Idaho found low enrollment in the weight management and tobacco cessation benefit programs and that only a small percentage of adults received the newly covered annual preventive physician visit benefit. The rate of annual preventive physician visits in Kentucky was low as well, perhaps suggesting the need for other policies, such as evaluating and rewarding providers based on the proportion of their caseload receiving annual preventive care, and/or raising awareness of the coverage of checkups under Medicaid and of the value of preventive care among recipients.

Although we do not find large impacts of the new Kentucky copayments on utilization, as discussed above, this could potentially be due to lack of provider success at collecting copayments, the fact that the copays that were charged were relatively small, or that physician reimbursement rates were increased the year after the copayments were introduced. The ACA also increases reimbursement rates for primary care services provided by primary care physicians to the same level as Medicare rates for 2013 and 2014, with the Federal government financing the difference. It's not clear what impact that rate increase will have given that it is temporary, but the analysis presented here suggests that rate increases can increase receipt of primary care.

Our results suggest that changes in financial incentives on both the supply side (such as reimbursement rate increases) and the demand side (i.e., benefit changes) alone may not be enough to generate the desired levels of preventive care, especially among those who have chronic health problems. Further research is needed to assess the extent to which other supply and demand factors, such as gaps in cultural competence, negativism about Medicaid among

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<sup>8</sup>For more information, see: <http://healthreform.kff.org/timeline.aspx>

<sup>9</sup>For more information see: [http://www.healthcare.gov/center/authorities/title\\_iv\\_prevention\\_of\\_chronic\\_disease.pdf](http://www.healthcare.gov/center/authorities/title_iv_prevention_of_chronic_disease.pdf)

providers, a low value placed on preventive care, depression and other mental health issues, and provider hours and accessibility are affecting utilization in general and preventive care in particular.

### **Disclaimer**

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