Crowd-In: The Effect of Private Health Insurance Markets on the Demand for Medicaid

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Objective. To investigate the effects of local labor market conditions and the availability of employer-sponsored health insurance on exits from the Medicaid program.

Data Source. Data for this project come from a unique administrative database containing a 2 percent sample of all cases on California's Medicaid program in 1987 and a 2 percent sample of all new cases starting each year between 1987 and 1995.

Study Design. The results are estimated using a discrete duration model where the monthly exit probability is a function of demographic characteristics, local labor market variables, the probability of having employer-sponsored insurance, and fixed year and county effects.

Principal Findings. Improvements in labor market opportunities (i.e., employment growth, wage growth, and increases in the availability of employer-sponsored health insurance) promote exits off the Medicaid program. A 2.5 percentage point increase in the availability of employer-sponsored insurance leads to a 6 percent increase in the probability that a completed spell lasts no more than 2 years. It would take a 2 percentage point decrease in unemployment rates or a 10 percent increase in average quarterly earnings to yield an equivalent increase in the likelihood of exiting Medicaid within 2 years. These effects are robust to the inclusion of county-level fixed effects and time effects.

Conclusions. Medicaid expenditures and caseloads are sensitive to local economic fluctuations and secular trends in the availability of health insurance. Continued decreases in employer-based health insurance coverage will greatly increase the demand for public insurance coverage and the financial pressures on state governments.

Key Words. Medicaid, unemployment, health insurance, local labor markets

As eligibility for public health insurance expands, individuals may drop private insurance coverage and switch to public insurance. This problem, known as crowd-out, has been a key issue in debates regarding the expansion of Medicaid to women and children living above 100 percent of the federal poverty level (FPL) (Cutler and Gruber 1996; Dubay and Kenney 1997;

Shore-Sheppard, Buchmueller, and Jensen 2000; Long and Marquis 2002; Lo Sasso and Buchmueller 2004). Rather than strictly reducing the number of uninsured, in the presence of crowd-out, increases in Medicaid eligibility shift the burden of health care coverage for the working-poor from employers to federal and state governments.

In this paper, I consider the opposite effect—"crowd-in." Specifically, I examine how changes in the availability of employer-provided health insurance and local labor market conditions (i.e., unemployment rates, employment opportunities, and earnings expectations) influence exits from the Medicaid program.

As the crowd-out literature shows, public health insurance and private health insurance are good substitutes for at least some low-income consumers. Thus, not only should changes in the structure of public health insurance affect the take-up of private health insurance but the reverse will also be true. Exogenous declines in the availability of employer-sponsored coverage may push people onto Medicaid, whereas expansions in private coverage may pull people off the Medicaid program. As a result, Medicaid caseloads and expenditures will be sensitive to changes in the availability of employer-sponsored insurance coverage and structural changes in the economy that affect the rate of coverage through employer-sponsored plans (e.g., the movement of jobs and workers from the manufacturing sector to the service sector, or from unionized employers to small businesses). In other words, it is not just the growth in jobs that will affect the dynamics of Medicaid participation but the growth in jobs with health insurance.

Few articles have examined the dynamics of Medicaid participation and none has modeled the relationship between the duration of Medicaid spells and *local* labor market conditions (Cromwell et al. 1997; Berger and Black 1998; Short and Freedman 1998). Studies of participation in public assistance programs have focused primarily on welfare cash assistance programs (e.g., temporary assistance for needy families [TANF] or the former aid for families with dependent children [AFDC] program). As a result, we know little about the duration of Medicaid spells in contrast to welfare spells.

Although Medicaid has always covered a much larger population than welfare and Medicaid spells have never been completely contemporaneous with welfare spells, welfare reforms enacted under the Personal Responsibility

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and Work Opportunity Reconciliation Act (PRWORA) further decoupled the two programs (Kronebusch 2001). For these reasons, it is increasingly important to have baseline data on Medicaid dynamics from which to analyze the effects of welfare reforms. Moreover, data on the effects of local labor market conditions and changes in private health insurance coverage on Medicaid are essential for forecasting caseload and expenditure growth.

No studies have modeled the relationship between local labor market conditions and the duration of Medicaid spells. But several studies on welfare participation suggest the relationship could be significant (Moffitt 1992, 2003; Bane and Ellwood 1994). Most importantly, research on the dynamics of welfare participation suggests that the relationship between labor market conditions and public assistance participation is best studied at a local, county level rather than at a state level. State-level analyses of labor market effects on public assistance participation have been inconclusive (O'Neil, Bassi, and Wolf 1987; Blank and Ruggles 1996). However Hoynes (2000) and Fitzgerald (1995) both found evidence that local labor market characteristics—measured by county unemployment rates, employment growth, employment to population ratios, average quarterly earnings, and per capita retail sales—significantly influence exits off welfare. Studies of welfare dependency also demonstrate that the availability of public and private health insurance affects the dynamics of public assistance participation and entry into the labor market (Blank 1989a; Ellwood and Adams 1990; Moffitt and Wolf 1992; Yelowitz 1995).

In part, research on the dynamics of Medicaid participation has been hindered by the lack of longitudinal data. In this analysis, I use a unique database that merges monthly data on a large sample of Medicaid participants in California with monthly data on county labor market characteristics over a 9-year period (1987–1995). No other data on public assistance participation provide such extraordinary breadth and depth of information on Medicaid participants. With these data, I estimate a discrete duration model where the monthly exit probability is a function of demographic characteristics, Medicaid benefit characteristics, local labor market conditions, the availability of employer-sponsored insurance, and fixed time and county effects.

BACKGROUND ON CALIFORNIA'S MEDICAID PROGRAM

California's Medicaid program—called Medi-Cal—is the largest state insurance program in the United States (U.S. House of Representatives 2004).

Nationally, Medicaid cost \$210 billion and covered an average of 51 million persons in 2002 (Kaiser Family Foundation 2004a). In California, Medi-Cal cost over \$27.2 billion and covered approximately 8 million persons (Kaiser Family Foundation 2004b).

Although all recipients of Medi-Cal are generally entitled to the same medical care services, the eligibility requirements for their participation differ substantially. This analysis includes persons from six eligibility groups: (1) AFDC-related single-parent families, (2) AFDC-unemployed parent (UP) two-parent families, (3) the Medically Needy (MN), (4) transitional/continuing Medi-Cal families, (5) Edward-Meyers recipients, and (6) the medically indigent (MI). These six groups comprise approximately 70 percent of all Medi-Cal recipients.

The largest group of recipients—single-parents with children—qualifies for Medi-Cal via their eligibility for welfare-related cash assistance. In 1987, these parents were required to have gross incomes below 150 percent of the FPL. By 1995, the gross income limit in California had declined to 133 percent of the FPL. Since Medi-Cal's inception in 1966, two-parent families with children have also been able to qualify for assistance based on their eligibility for AFDC-UP, the pre-welfare reform program that provided cash assistance to two-parent families when the principal wage earner was currently unemployed but had a previous work history. Under TANF, Medicaid eligibility is now based on the AFDC and AFDC-UP eligibility standards in effect on July 16, 1996.

Families whose incomes and resources exceed the gross income and asset limits set for AFDC or AFDC-UP recipients but who would otherwise qualify for these programs are eligible for Medi-Cal through the MN program. However, they are required to spend down their income on medical care expenses each month before Medicaid will cover them. Thus, Medi-Cal does not assist with expenses until a family's income after medical expenditures is close to 100 percent of the FPL.

For families who have lost eligibility for welfare cash assistance because of recent increases in earned income or child support payments, eligibility for Medi-Cal may be retained through the continuing/transitional eligibility program. This program extends eligibility for Medi-Cal for up to 12 months. A second transitional eligibility program, called the Edward-Meyers program, is unique to California and was created by court order. It provides persons with Medi-Cal coverage until their family's eligibility for Medi-Cal has been determined. Families may remain on the Edward-Meyers program for months and even years before exiting Medicaid completely or gaining eligibility through another aid category.

The last Medi-Cal eligible group included in this analysis is the MI group. The MI program in California provides Medicaid benefits to low-income persons under age 21 and adults over age 21 with a confirmed pregnancy. During the study period (1987–1995), most recipients included in the MI program are persons also eligible under the Medicaid expansions of the early 1980s and have incomes below 200 percent of the poverty level.¹

The remaining Medi-Cal eligible groups include the aged, blind, and disabled; persons eligible for emergency-only or pregnancy-only services; and children living at up to 200 percent of the FPL. For this paper, I exclude the aged, blind, and disabled because they face substantially different restrictions on their eligibility for Medicaid services. Furthermore, their age and medical conditions may limit their sensitivity to labor market opportunities and increase their sensitivity to changes in the availability of health insurance. Children-only cases are also excluded from this analysis because of the lack of data regarding their parents. The vast majority of these cases were foster-care related.

DATA

Data from three sources are merged together by month and county. This unique dataset contains several advantages over other sources of data on Medicaid participation. First, the data come from administrative records. Other datasets (e.g., the survey of income and program participation [SIPP]) rely on self-reported health insurance status to identify persons on Medicaid and suffer from significant under-reporting of Medicaid coverage, recall errors, and “seaming” biases (Lewis, Ellwood, and Czajka 1998). Second, no other data contain as detailed information on the source of a person’s eligibility for Medicaid. With this detail, I am able to analyze important difference in spell dynamics by enrollment group. Third, though these data are only available through 1995, no other database spans as many years and captures such significant variation in labor market opportunities. This variation allows me to identify the effects of local labor market conditions and structural changes on Medicaid participation.

Medicaid Participation

Data on Medicaid participation come from the California Work Pays Demonstration Project: Statewide Longitudinal Database (LDB), 2 percent sample (U.C. DATA 1996). The LDB comprises a 2 percent sample of cases enrolled in California’s Medicaid program in January 1987 plus a 2 percent sample of all new Medicaid cases starting each year from 1988 through 1995. The data

are compiled from administrative records that contain monthly information on enrollment in the Medicaid program.²

Within this sample all persons with the same case number were aggregated into a single family-level record. I follow the Medicaid spell for the mother in the family and, if no mother is present, the father. A Medicaid spell was defined as a period of uninterrupted eligibility for full Medicaid benefits. To adjust for administrative churning in eligibility, a family was only considered to have exited Medicaid if it was not recorded as eligible for two continuous months.³ The final sample was obtained after dropping all left-censored spells and a small number of cases with missing race data. After sample selection, there were a total of 33,093 families with 49,300 spells and 1,021,461 person months.

Demographic and Benefit Characteristics

The LDB data also contain information on demographic factors and the specific type of cash assistance, if any, a recipient is receiving in addition to Medicaid. Demographic variables include family structure (single mother, single father, or two-parent family); age (15–19, 20–34, 35–44, 45–54, 55–64) at the start of the spell; race/ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, Filipino, Cambodian, Laotian, Vietnamese, other) of the head of household; number of kids in the family; whether the mother is pregnant during the Medicaid spell (yes/no); and age of the youngest child (<0, 0–2, 3–5, 6–21) at the start of the spell.⁴

LDB data also provided additional information on the benefit characteristics of an individual's Medicaid spell. Additional spell characteristics controlled for in the model included (1) whether the recipient had a previous Medicaid spell; (2) whether the modal aid code associated with the recipient's current Medicaid spell was based on eligibility for AFDC, AFDC-UP, Edward-Meyers, Continuing Medi-Cal, the MI Program, or the MN program; (3) whether the Medi-Cal recipient had ever received a cash grant; (4) whether the recipient had ever received Medi-Cal only; (5) whether the recipient ever had to pay a share of cost; (6) whether the recipient had ever been classified as an AFDC-UP participant in a two-parent family; and (7) whether the recipient ever qualified as an immigrant/refugee case.⁵

Labor Market Conditions

Data on labor market characteristics were obtained from the California Employment Development Department (EDD 1997). Four key measures of labor

market conditions were used in this analysis: unemployment rate, employment to population ratio, level of employment (total and by one-digit Standard Industry Code [SIC] sector), and average quarterly earnings deflated to 1987 (total and by sector). For all but a few small counties in northern California, labor market conditions were measured at the county level. Small counties were grouped to protect the confidentiality of Medicaid recipients sampled for the LDB. After grouping the small counties, the data covered 41 labor market regions in California.

Employer-Sponsored Health Insurance

No direct measures of health insurance status in California were available at the county level. Therefore, I created an index on the availability of employer-sponsored health insurance to the working poor (i.e., employed persons living below 200 percent of the FPL).⁶ The index is calculated using statewide health insurance data from the 1988 to 1996 March Supplements of the Current Population Survey (CPS), industry-level poverty-weights from the CPS, and industry and firm size weights provided by EDD.

Using the California subsample of the CPS, I estimated the percent of civilian workers age 15 or older covered by health insurance through their own employer by one-digit SIC industry groups (H_i) and the percent of these workers living below 200 percent of the FPL (P_i).⁷ Multiplying the percent insured in each industry (H_i) with the percent working poor in each industry (P_i) and the number employed in each industry by county (E_{ic}), I obtain an estimate of the number of working poor with insurance in each industry within each county. Summing over all industries in the county and dividing by the number of working poor in the county yields an estimate of the fraction of working poor in the county insured through their own employer (FPH_c).⁸

In the absence of data to directly calculate insurance rates by county from the CPS, this measure provides a good instrument for the probability that former Medi-Cal recipients in the county will be able to obtain employer-sponsored health insurance coverage if they work. It takes into account both yearly variations in state insurance rates, variations in insurance rates by industry, and variations over time and between counties in employment. The measure captures both the probabilities that an employer offers coverage and that an employee accepts the offer.⁹ Because those leaving Medicaid will most likely be employed in low-wage jobs (Short, Cantor, and Monheit 1988), it also captures variation between industries in the composition of employment by poverty status.

METHODS

The determinants of exits from Medicaid are estimated using a discrete time hazard model where the hazard rate is modeled as a logit probability (Lancaster 1992; Allison 1984). This specification easily incorporates nonmonotonic duration dependence and time-varying covariates. The hazard rate captures the probability of an exit in the t th month given continuous program participation for the last $t - 1$ months and a vector of covariates. The primary covariates of interest are labor market conditions and employer-sponsored health insurance rates. In addition, I control for demographic characteristics and characteristics of the Medicaid benefits received. I also include dummy variables to account for the basic duration properties in the model.¹⁰

The discrete duration model is estimated using conventional maximum likelihood methods where the likelihood is a function of both the survival function and the duration distribution. Right-censored spells contribute to the estimation of the hazard until the month they are censored. Left-censored spells are dropped from the analysis because the inception time for left-censored spell is unknown and it is impossible to control for duration dependence in these spells.¹¹ To allow for the fact that observations (i.e., person months) from the same case are not independent, robust standard errors are calculated. To control for omitted area characteristics (e.g., average educational level), I include fixed area effects.¹² To control for omitted time trends (e.g., part-time employment rates), I include fixed year effects. With both these fixed effects included, the model is identified by within county variation over time that is different from the overall time trends in employment growth, wage growth, and insurance coverage in the state.

Although county and year fixed effects control for omitted area characteristics and time trends, some important limitations remain. First, in some cases the relevant labor market area may be larger or smaller than the county. Although subcounty data were not available, I tested for broader labor market effects by grouping neighboring counties into metropolitan statistical areas (MSA) and computing all labor market variables at the MSA level. The results did not change substantially. Second, a small percent of families move between counties during a spell. If the moves are correlated with labor market conditions (e.g., families move to an area with better labor market conditions before exiting Medicaid) then my estimates will be upwardly biased. To test for this, I estimated the effects of labor market conditions holding the county of residence constant throughout the spell. As before, the results did not change substantially. Third, the composition of Medicaid caseloads may change as the

economy moves from a period of economic expansion to a period of economic contraction. The cohort entering the program during an economic contraction is likely to have better work experience and higher education than the cohort entering during an economic expansion. The presence of a cohort effect would bias the results toward zero. Although I do find evidence of a cohort effect, it does not affect the direction or significance of labor market variables.

RESULTS

Descriptive

Demographic Characteristics of Medicaid Recipients. Approximately 34 percent of the 49,300 spells observed between 1987 and 1995 were right-censored. And 75 percent of the observed spells were to new recipients (i.e., recipients who had no record of a previous spells on Medicaid between 1987 and 1995). In the majority of spells, the head of household was a white (41 percent), single mother (72 percent) aged 20–34 (60 percent) with one child (mean number of kids was 1.6) between the ages of 0 and 2 (51 percent). Eight percent of the Medicaid spells were attributable to an immigrant family. The mean modal aid code for 49 percent of spells was AFDC. But eligibility for Medicaid via the AFDC-UP (11 percent), MI (10 percent), and MN (23 percent) programs was also common.

Movements between aid codes during a spell occurred frequently. Of those who began a Medicaid spell on AFDC or AFDC-UP, 34 and 31 percent, respectively, ended the spell on the Edward-Meyers program. In many cases, the Edward-Meyers program substituted for the continuing Medi-Cal program in extending Medi-Cal benefits after the loss of eligibility for cash assistance. However, most families (56 percent of AFDC-related spells and 46 percent of AFDC-UP related spells) did not continue to receive Medicaid benefits after losing cash assistance.¹³

Labor Market Conditions and Private Health Insurance. During the study period, the average unemployment rate was 8.6 percent; average quarterly earnings were \$5,343 dollars (1987 dollars); and 51 percent of civilian workers in California were insured through their own employer. The average insurance rate was lower (44 percent) for those living below 200 percent of the FPL.

These means, however, mask significant variation in California's labor market conditions over time and across counties. Between 1987 and 1990

California experienced a period of economic expansion followed by a period of economic contraction from 1991 to 1995. As a result, unemployment rates varied from a low of 2.2 percent in more urban areas in the state (e.g., Alameda county) to a high of 38 percent in more rural areas (e.g., Fresno). Likewise, average quarterly earnings and the availability of employer-provided insurance varied significantly over time and across labor market regions. In rural areas, average quarterly earnings were as low as \$3,293 and the poverty-weighted health insurance rate (estimated as described above) was as low as 30 percent during periods of economic contraction. In urban areas, average quarterly earnings reached \$8,067 and poverty-weighted employer-provided health insurance rates were as high as 57 percent during periods of economic expansion.

During the study period, there was also significant variation in employment and average quarterly earnings by industry. Between January 1987 and January 1996, employment in the service sector increased 5 percent. At the same time, employment in manufacturing decreased by almost 4 percent. Average earnings for jobs in retail, nonprofessional services, and agriculture—sectors that are likely to employ Medicaid recipients—were significantly lower (\$4,106, \$3,077, and \$3,913 respectively) than average quarterly earnings in all industries (\$5,343).

Finally, data from the CPS show that employer-sponsored health insurance was most common in industries with a stable work force, such as public administration (80 percent in 1991), and industries whose workers were generally in collective bargaining arrangements, such as manufacturing (73 percent in 1991), and transportation, communication, and utilities (71 percent in 1991). Employers in the agricultural, service, and retail sectors were among the least likely to provide health insurance benefits to their employees. In 1991, health insurance rates in agriculture, retail, and services were 25, 34, and 31 percent, respectively.¹³

Multivariate

Effects of Demographic Characteristics. The modal Medicaid recipient is receiving welfare cash assistance and is a white single mother between 20 and 34 years old with one child ages 0–2. For this baseline case, the median spell length is 19 months and the probability of leaving Medicaid within 2 years is 54 percent (Table 1). Teenage parents (ages 15–19) and mothers older than 45 tend to stay on Medicaid longer than mothers between the ages of 20 and 34. Pregnant women and East Asian refugees (e.g., Vietnamese) had the

Table 1: Predicted Effects of Family and Benefit Characteristics on Medi-Cal Exit Rates*

	<i>Probability That a Completed Spell Lasts</i>					<i>Predicted Median</i>
	<i>≤ 6 mo.</i>	<i>≤ 1 yr</i>	<i>≤ 2 yrs.</i>	<i>≤ 4 yrs.</i>	<i>≤ 8 yrs.</i>	
Base [†]	0.135	0.316	0.541	0.639	0.776	19
Single dad	0.151	0.349	0.585	0.683	0.815	17
Two parent on AFDC-UP [‡]	0.149	0.344	0.578	0.676	0.809	18
Had past spell	0.146	0.338	0.570	0.669	0.803	18
Teen head (ages 15–19)	0.113	0.270	0.475	0.570	0.710	27
Head 35–44	0.120	0.284	0.496	0.592	0.731	24
Head 45–54	0.100	0.241	0.431	0.522	0.662	35
Head 55–64	0.099	0.240	0.430	0.520	0.660	36
Hispanic	0.130	0.306	0.526	0.624	0.762	20
Black	0.131	0.309	0.530	0.628	0.766	20
Vietnamese	0.061	0.153	0.288	0.358	0.478	100
Number kids = 2	0.126	0.298	0.516	0.613	0.752	22
Pregnant in spell	0.070	0.174	0.325	0.401	0.529	92
Youngest < 0	0.238	0.507	0.765	0.850	0.938	12
Youngest child 3–5	0.142	0.331	0.561	0.659	0.794	18
Youngest child 6–21	0.143	0.334	0.564	0.663	0.797	18
Edward-Meyers [‡]	0.281	0.575	0.827	0.899	0.966	10
Continuing Medi-Cal [‡]	0.292	0.591	0.840	0.909	0.971	10
Medically indigent [‡]	0.271	0.560	0.814	0.889	0.961	11
Medically Needy [‡]	0.164	0.374	0.616	0.714	0.841	17
Ever Medi-Cal only	0.345	0.665	0.894	0.947	0.987	8
Ever Medi-Cal w/cost	0.256	0.537	0.794	0.873	0.952	11
Ever immigrant	0.137	0.320	0.546	0.644	0.781	19
Ever AFDC-UP	0.139	0.325	0.552	0.651	0.787	19

*Predicted effects are calculated from logit models including duration dummies, county fixed effects, and year fixed effects (see Table 7, model 3 in Appendix 1 for a detailed specification).

[†]The baseline case is a white, single mother age 20–34 receiving welfare (i.e., AFDC) and with one child age 0–2.

[‡]The eligibility category through which a Medi-Cal recipient qualifies may change during a spell. mo., months; yr, year; AFDC-UP, aid for families with dependent children-unemployed parent.

longest spells. By contrast, persons who have historically had greater labor market opportunities (e.g., single fathers, parents between the ages of 20 and 34, and whites) had relatively short Medicaid spells.

Effects of Benefit Type and Level. In addition to varying across demographic groups, Medicaid dynamics vary significantly by modal eligibility group and benefit level (Table 1). In contrast to single mothers on AFDC, two-parent

families on AFDC-UP will have a median spell lasting approximately 18 months rather than 19. Those whose modal eligibility is through the Edward-Meyers program or the continuing Medi-Cal programs have the shortest median spell length of 10 months. Finally, those who have qualified for Medi-Cal only and those who have had to pay a share of cost are more likely to exit the program and have shorter spells.

Effects of Local Labor Market Conditions. Whether evaluated using unemployment rates, employment-to-population ratios, or employment levels, I find that improvements in employment opportunities significantly increase movements off the Medicaid program (Table 2). The data presented in Table 2 indicate the percent change (relative to the baseline specification) in the probability of exiting Medicaid given a one standard deviation change in each labor market variable. Evaluated at the mean, a decrease of 3.7 percentage points (43 percent) in the unemployment rate led to a 5-month decrease (16.66 percent) in median spell length (panel A). A 4.5 percentage point (10 percent) increase in the employment-to-population ratio (panel B) reduced the median spell length by approximately 2 months (6.66 percent). Using the log of employment as a measure of job availability (panel C), I found that a 10 percent increase in employment was associated with a 3-month (10 percent) reduction in the median spell length. The elasticities ($\% \Delta Y / \% \Delta X$) implied by these percentage changes are 0.39 for unemployment, 0.67 for the employment-to-population ratio, and 1.00 for employment growth. Thus, exit rates tend to be slightly more responsive to changes in employment growth than to changes in the employment-to-population ratio or to unemployment rates. Regardless of the measure of employment opportunities used, a 10 percent increase in average earnings decreased median spell length by 3–4 months (10–13 percent). Results on the effects of employment growth and earnings did vary significantly by industry (see Appendix 1 online). In general, Medicaid exit rates were most responsive to employment and earnings growth in the retail sector.

Effects of Employer-Sponsored Health Insurance. The probability of exiting Medicaid clearly increased with improvements in the availability of employer-sponsored health insurance benefits for the working poor (panel D). A 5 percent increase (2.5 percentage points) in insurance rates was associated with a 13 percent decrease (4 months) in median spell length for the baseline case.¹⁴ Given the implied elasticity (2.60), Medicaid spells are

Table 2: Predicted Effects of Changes in Labor and Health Insurance Markets on Medi-Cal Exit Rates*

	Predicted Median Spell Length [†]	% Change in Probability That a Spell Lasts				
		≤ 6 mo.	≤ 1 yr	≤ 2 yrs.	≤ 4 yrs.	≤ 8 yrs.
<i>(A) Model 1: unemployment rate</i>						
Unemployment rate − 0.037	25	11.48	10.29	8.60	7.70	6.14
Earnings+10%	27	8.75	7.86	6.60	5.93	4.75
<i>(B) Model 2: employment-to-population ratio</i>						
Employment/population+0.045	28	6.86	6.17	5.20	4.67	3.75
Earnings+10%	26	9.92	8.91	7.46	6.69	5.34
<i>(C) Model 3: employment growth</i>						
Employment+10%	27	9.10	8.17	6.86	6.15	4.93
Earnings+10%	26	10.66	9.56	8.01	7.17	5.73
<i>(D) Model 4: poverty weighted health insurance rate</i>						
Unemployment rate − 0.037	24	17.03	15.18	12.58	11.20	8.84
Earnings+10%	27	8.18	7.36	6.18	5.55	4.45
Insurance rate+0.025	26	11.19	10.04	8.40	7.52	5.99
Combined changes	18	40.28	35.09	28.04	24.45	18.52

*Each panel (A–D) reflects calculations from a separate model. All models include the control variables listed in Table 1, duration dummies, county fixed effects, and time fixed effects.

Models 1–3 use three different measures of labor market conditions. In model 4, the poverty weighted health insurance rate is added to model 1. All simulations are calculated for the baseline case—a white, single mother ages 20–34 with one child age 0–2 and enrolled in AFDC.

Labor market variables are set to their mean values.

[†]The predicted median spell length for the baseline case is 30 months.

mo., months; yr, year; AFDC, aid for families with dependent children.

more responsive to employer-provided health insurance rates than to any other aspect of the local labor market.

The total combined effect of changes in labor market conditions is quite large (panel D). As the economy moves from a recession to a period of economic expansion, the median Medicaid spell will decrease by a full year (12 months). As spell lengths decline so will Medicaid caseloads and expenditures. In other words, caseloads and expenditures will be sensitive to changes over time in labor market conditions and the quality of jobs (i.e., earnings and the availability of employer-sponsored insurance). In addition, changes in the *composition* of the labor force that increase the rate of employer-sponsored health insurance coverage and the availability of jobs in sectors most likely to employ persons living near or below poverty will result in significant declines in Medicaid caseloads and expenditures.¹⁵

Labor Market Effects by Benefit Group. To allow for individual heterogeneity among the populations being served by Medicaid, we reestimate our final model (model 4, Table 2) by benefit group. Models 2 through 4 of Table 3 show labor market effects for groups with different modal aid codes. AFDC-UP families are significantly more sensitive to all labor market conditions than AFDC families. These results are not surprising because AFDC-UP families contain two potential earners who typically have more substantial labor market experience and higher potential wages than single-parent recipients (Hoynes 1996).

Persons enrolled through the MN program are less sensitive to labor market opportunities and changes in health insurance rates than those on AFDC. Again, these results are sensible. The MN have higher incomes and assets than persons on AFDC, and only a proximate need for health insurance has sent them to the Medicaid program. Moreover, for those seeking to exit the Medicaid program, private health insurers would consider the illness a preexisting condition. Thus, even when health insurance is available more generally, it may not be available to those exiting the MN program.

Models 5 through 7 of Table 3 show only one significant difference between Medicaid enrollees with different levels of benefit. Persons who have received Medicaid only or have been required to pay a share of costs are less sensitive to earnings growth than those receiving a cash grant in addition to Medicaid.

DISCUSSION

Over the last two decades employer-sponsored insurance coverage has eroded, leaving an increasing number of persons dependent on the public health insurance system or without any health insurance at all (Strunk and Reschovsky 2004). In this analysis, I study the effects of changes in the availability of employer-sponsored health insurance on Medicaid participation. I find that those receiving Medicaid benefits are highly sensitive to the availability of employer-sponsored health insurance and other local labor market conditions. A 3.7 percentage-point decrease in unemployment rates, together with a 10 percent increase in earnings and a 2.5 percent rate increase in employer-sponsored insurance coverage, decreases the median spell length by up to 40 percent (approximately 1 year). All else equal, shorter Medicaid spells will lead to smaller caseloads and lower Medicaid expenditures.

Table 3: Parameter Estimates of Labor Market Effects, by Benefit Group[†]

	<i>Person Months</i>	<i>Unemployment Rate</i>	<i>Earnings (1,000s)</i>	<i>Insurance Rate Poverty</i>
Model 1: full sample	1,021,428	− 4.164** (0.520) <i>12.6%</i>	0.159** (0.023) <i>6.2%</i>	0.046** (0.008) <i>8.4%</i>
Model 2: modal AFDC cases	652,357	− 5.509** (0.799) <i>14.1%</i>	0.367** (0.034) <i>13.5%</i>	0.069** (0.012) <i>12.0%</i>
Model 3: modal AFDC-UP cases	144,185	− 4.242** (1.610) <i>9.8%</i>	0.598** (0.074) <i>20.0%</i>	0.036 (0.026) <i>5.6%</i>
Model 4: modal Medically Needy cases	165,761	− 4.759** (0.879) <i>13.1%</i>	− 0.070 (0.042) <i>− 2.7%</i>	0.019 (0.014) <i>3.5%</i>
Model 5: cases ever on Medi-Cal with cash grant	856,926	− 5.177** (0.680) <i>12.3%</i>	0.383** (0.029) <i>13.2%</i>	0.052** (0.011) <i>8.4%</i>
Model 6: cases ever on Medi-Cal only	663,192	− 5.384** (0.646) <i>14.9%</i>	0.069* (0.028) <i>2.7%</i>	0.055** (0.010) <i>10.1%</i>
Model 7: cases ever on Medi-Cal with share of cost	138,082	− 4.161** (1.091) <i>9.9%</i>	− 0.154* (0.056) <i>− 5.2%</i>	0.019 (0.018) <i>3.1%</i>

* $p < .05$.** $p < .01$.

[†]All models are estimated using logits that include the control variables listed in Table 1, duration dummies, county fixed effects, and time fixed effects. Estimated coefficients from the logit models are presented first. Standard errors are in parentheses.

The numbers in italics are the predicted percentage changes in the probability that a completed spell lasts ≤ 2 years for a 3.7 percentage point decrease in unemployment, a 10 percent increase in earnings, or a 2.5 percentage point increase in the poverty-weighted health insurance rate.

The percentage change is calculated for the baseline case—a white, single mother ages 20–34 with one child age 0–2—with labor market variables initially set to their mean values.

For models 5–7, the modal case is set to AFDC.

AFDC-UP, aid for families with dependent children-unemployed parent.

Not only will the magnitude of local labor market growth affect Medicaid participation but also the composition of local labor market growth will affect the dynamics of Medicaid enrollment. Employment growth in the service and retail sectors, where the poor and near-poor are likely to find employment, will have a greater influence on Medicaid exits than growth in other sectors. At the same time, however, persons leaving Medicaid with jobs in these sectors will be less likely to obtain insurance coverage through their employer. Thus, the positive effect on exit rates of employment growth in

these industries may be reduced by the lack of health insurance coverage available through them.

This analysis also finds significant differences between demographic groups in their responsiveness to local labor market conditions. Participants with greater labor force attachment and less freedom to migrate to counties with better labor market conditions will be more sensitive to changes in employment, earnings, and health insurance coverage. On the other hand, those with preexisting medical conditions that may limit their access to private health insurance will be less sensitive to growth in employer-sponsored coverage, even when the employment outlook appears good.

Although there are variations in their responsiveness, persons on Medicaid do respond to economic incentives and dependency on public assistance reflects a lack of opportunities for those seeking self-sufficiency. As employment, wages, and the availability of employer-sponsored health insurance grow, individuals will exit the Medicaid program and take advantage of opportunities to enroll in private-sector insurance programs. Those most likely to do so are among the working poor who want to avoid the stigma and routine hassles associated with receiving any form of public assistance (Levinson and Rahardja 2004).

These results highlight one of the major problems associated with the devolution of public assistance programs to the states (and counties)—the lack of countercyclical public financing. Demand for Medicaid will tend to increase during periods of economic contraction—a time when states find their tax revenues declining. Federal funding allows states to share the economic risk of public programs and to take advantage of geographic differences in economic conditions. With more limited federal funding for Medicaid in addition to other publicly funded programs (e.g., education and welfare), states will find it increasingly difficult to balance their budgets during economic downturns. As the fastest growing share of state budgets, Medicaid may be a primary target for cuts (Kaiser Family Foundation 2004c).

Overall, these results show that just as expansions in Medicaid crowd out employer-sponsored coverage, contractions in employer-sponsored coverage crowd in Medicaid participation. Therefore, improvements in employer-provided health insurance programs, especially coverage for the working poor, can help to decrease the demand for Medicaid. In the absence of comprehensive health care reform, improving health insurance coverage in America will require a sustained attack on both fronts. Initiatives to expand eligibility for Medicaid and increase the take-up of Medicaid benefits should be combined with initiatives to improve the availability and affordability of health insurance through the workplace and individual insurance markets. By

creating better transitions between the public and private insurance system, policymakers can help to support welfare to work transitions and promote the health and well-being of America's working poor families.

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NOTES

1. A review of the administrative data used in this study showed that the Medicaid expansion aid categories for pregnant women and children were never assigned during the time period under study. Instead, eligibility workers in California continued to assign pregnant women and children to the medically indigent program.
2. Although the LDB allows researchers to follow many persons for a long time, like other administrative datasets, it also has significant limitations. The LDB cannot be used to evaluate program participation and cannot be used to measure outcomes, such as indicators of well-being, which are not tracked by the Medi-Cal administration. Moreover, only a limited number of demographic control variables are available and, once they leave the program, no data on program participants are available. For a comprehensive discussion of the benefits and limitations of administrative data in policy-relevant research, see Hotz et al. (2006).
3. Administrative "churning" occurs whenever recipients appear to cycle on-and-off aid because of administrative problems without actually going "off" aid. Brady and Luks (1995) analyzed churning in the LDB and found that administrative breaks are typically 2–3 months among AFDC recipients.
4. In two-parent families, the race and age of the health of household were set equal to the father's characteristics. If data on the father were missing, the mother's age and race were used. When a woman is pregnant in the spell and the youngest child is <0 , this implies that the woman has no other living children.
5. Immigrant families included refugee cash assistance recipients, IRCA aliens, and OBRA aliens.
6. The 200 percent FPL weight was chosen to reflect the upper income limit for pregnant women and the medically needy who must spend-down their income to become eligible for medical assistance from the Medi-Cal program.

7. Several changes were introduced in the 1995 CPS (Swartz 1997). Therefore, health insurance estimates for 1994 and 1995 may not be comparable to estimates from earlier years.
8. The formula for the fraction of working-poor with employer-sponsored health insurance is $FPH_c = \frac{\sum (H_i \times P_i \times E_{ic})}{\sum (P_i \times E_{ic})}$.
9. Employees may choose not to accept coverage if they have another source of coverage, if the cost of the employee's share of premiums is high, or if they do not expect to need medical services. Thus, our data may underestimate the probability that coverage is offered.
10. In all models, the duration dummies are estimated for 2-month intervals over the first 24 months, two 3-month intervals and one 6-month interval over the third year, 12-month intervals for the next 4 years, and two 3-month intervals followed by 2-month intervals for the remaining study period. Medicaid exit rates peaked between the 8th and 14th months of a spell and gradually decline thereafter. They were jointly significant at the 1-percent level and individually significant up through the 7th year.
11. Left-censored spells tend to over represent long spells. If people with long spells are less sensitive to labor market conditions, dropping these spells will likely lead to an upward bias in the labor market effects.
12. Because there are few individual-level variables in the LDB, omitted individual characteristics may be particularly problematic. Research by Hoynes (2000), however suggests that the inclusion of county-fixed effects control for aggregate individual characteristics (e.g., average education level) fairly well.
13. More descriptive information on the demographic characteristics of persons in our sample and Kaplan-Meier estimates of failure rates and median spell length for each characteristic are available on-line in Appendix 1. Appendix 1 also provides additional detail regarding labor market conditions in California.
14. Results may be upwardly biased if the health insurance effect captures other aspects of job quality that are not reflected in differences in wage growth across counties or time trends.
15. Models (not shown) without year fixed effects were also estimated. When year fixed effects are not included the estimated effects of labor market conditions on Medicaid exists are two to four times larger than the effects shown here.

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SUPPLEMENTARY MATERIAL

The following supplementary material for this article is available online:

APPENDIX 1. Additional Descriptive and Multivariate Results