THE HENRY J. KAISER FAMILY FOUNDATION

THE KAISER COMMISSION ON
Medicaid and the Uninsured

ISSUE BRIEF

May 2013

What Difference Does Medicaid Make?

Assessing Cost Effectiveness, Access, and Financial Protection under Medicaid for Low-Income Adults

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Executive Summary

As federal and state policymakers debate how to address budget deficits and states consider next steps in extending coverage to their low-income population, including implementing the ACA Medicaid expansion, information on the role that Medicaid plays in facilitating access is crucial. This analysis uses the Medical Expenditure Panel Survey to examine the use and cost of health care among low-income nonelderly adults who are covered by Medicaid relative to their expected service use and costs if they instead had employer-sponsored insurance (ESI) coverage or were uninsured. We control for a wide array of factors that also influence utilization and spending (such as individual characteristics and local factors) in an effort to isolate the specific effects of Medicaid coverage.

Consistent with previous research, our analysis underscores how Medicaid coverage facilitates access to care for program beneficiaries. We find that Medicaid provides access to health care services comparable to that of ESI but at significantly lower costs. Specifically, if adult Medicaid beneficiaries were instead covered by ESI, their access to care would not be significantly different, and their likelihood of using most health care services (e.g., primary care doctors, prescription drugs and inpatient care) would not differ significantly, with the exception of emergency department use (which would go down) and specialist visits (which would go up). Moreover, despite few significant differences in the expected level of service use between Medicaid and ESI coverage, we find that adult Medicaid beneficiaries' health care costs would be over 25 percent higher if they had ESI coverage instead. Importantly, compared to ESI coverage, Medicaid affords better financial protection from medical expenses for individuals: out-of-pocket (OOP) spending for health care services would be three times higher if Medicaid beneficiaries were instead covered by ESI. For a low-income population, such an expense is a considerable financial burden that could cause individuals to delay getting needed health care.

Further, our analysis confirms the better access and financial protection Medicaid beneficiaries have over their uninsured counterparts. Our projections show that, if beneficiaries did not have Medicaid coverage and were instead uninsured, they would be significantly less likely to have a usual source of care and more likely to have unmet health care need. Similarly, if Medicaid beneficiaries did not have their health insurance, projections indicate that the likelihood of their using health care services in the categories we examined would be significantly lower, except for outpatient ED use, which would be unchanged. Further, Medicaid facilitates this access to care at lower financial cost to individuals: If Medicaid beneficiaries in our sample were instead uninsured, their OOP spending would increase on average nearly four-fold. However, spending on their health care services overall would be significantly lower, as expected given the projected decrease in their service use. Even with no health insurance, these individuals would still incur health care costs, most of which would likely be uncompensated care costs that the health care system would need to absorb.

Results from this study suggest that policymakers considering options to cut the Medicaid program or shift beneficiaries to private coverage should be mindful of the program's cost effectiveness and the financial benefits and access to care it provides to low-income Americans. Further, expanding Medicaid to uninsured low-income adults is likely to improve those adults' access to care and reduce the financial burden they currently face.

Introduction

In 2011, Medicaid spending was projected to reach more than $430 billion and to provide health insurance coverage to more than 60 million low-income individuals at some point during the year.[1] Although Medicaid looks large in aggregate, new estimates demonstrate that recent Medicaid spending growth on a per enrollee basis is less than that of private insurance. It also is close to the per capita growth in GDP, a spending target often advocated in proposals to address health care spending.[2] Moreover, projections by both The Centers for Medicare and Medicaid Services and the Congressional Budget Office put future spending per Medicaid enrollee at just above expected growth in GDP per capita.[3] Much of the recent growth in total Medicaid spending has been attributed to the rise in program enrollment.[4] Enrollment has risen because there are more low-income and unemployed Americans in the wake of the recent economic downturn and because there are more elderly and disabled enrollees as the nation's population has grown older.

Despite lower costs per enrollee than other payers, Medicaid is a significant expenditure item and thus a major target in federal and state budget debates, such as the debate over reducing the federal deficit, which draws into question the future direction for the program. Proposals to curtail Medicaid spending range from making modest changes, such as moving more program beneficiaries into managed care; to making Medicaid a block grant program, in which the federal government would provide states a fixed amount of funding to finance their Medicaid programs; to per capita limits on Medicaid spending, under which the federal government would provide states a fixed amount of funding per enrollee. Also affecting the future of Medicaid is the Supreme Court's June 2012 ruling making the Medicaid expansion provided in the Affordable Care Act optional for states. How many states will go forward with the expansion and how many will decline it is unclear at this point. Given the ongoing budget debate and voluntary nature of the ACA Medicaid expansion, the benefits and costs of Medicaid will undoubtedly be once again at the forefront of state and federal policy discussions.

To inform these discussions, in this brief we assess the role that Medicaid plays in providing care to low-income Americans. We update and extend previous analyses and examine the use and cost of health care among low-income nonelderly adults who are covered by Medicaid relative to their expected service use and cost of health care had they instead had employer-sponsored insurance (ESI) coverage.[5] We control for a wide array of factors that also influence utilization and spending (such as individual characteristics and local factors) in an effort to isolate the effects of Medicaid coverage from other factors. We also examine individual out of pocket spending on health care for Medicaid enrollees compared to what they would face under ESI.

We also examine the expected use and cost of health care services if the nonelderly adults covered by Medicaid had no insurance coverage. This comparison provides an assessment of the gains afforded by the Medicaid program in terms of access to health care and financial protection from incurring burdensome medical expenses. It also enables us to examine what the cost to the overall health system would be if the adults on Medicaid were instead uninsured, as would result for some enrollees under some of the policy changes that are being considered.

Overview of Analytic Approach

This study uses data from the 2003 to 2009 Medical Expenditure Panel Survey (MEPS), a nationally representative survey that ascertains health care costs, use and access for individuals and families.* Our study sample is nonelderly (age 19 to 64), low-income adults, which we define as having a family income at or below 138 percent of the federal poverty line. We selected this particular population because it is the group that stands to gain the most from Medicaid expansion provided under the ACA. A significant body of literature has demonstrated that Medicaid beneficiaries are distinct from both those covered by ESI and the uninsured on a host of demographic, socioeconomic, and health status dimensions.+ This holds true for our sample as well, as shown in Appendix Table 1 which provides selected demographic and health status characteristics of low-income adults by insurance status for the study sample. Given these well-established differences, we focus the discussion exclusively on findings that already have taken into account these personal and health status differences.

To do that, we rely on regression-adjusted estimates that control for demographic and socioeconomic characteristics of the individual and family; the individual's health and disability status, health conditions and limitations; and characteristics of the local community such as provider supply, health care cost variation, local economy and local demand for health services. A detailed description of the data and the study methodology are provided in the technical appendix at the end of this report.

In presenting results, we first report on how nonelderly adults with Medicaid for the full year would have fared if they instead had ESI coverage for the full year, and then if they had no health insurance coverage for the full year. These estimates assess access to care under Medicaid. We then compare the costs of their care under different insurance states to assess the relative cost-effectiveness of Medicaid and the financial protection it provides.

* Agency for Healthcare Research and Quality. Medical Expenditure Panel Survey: Survey Background. August 21, 2009. http://meps.ahrq.gov/mepsweb/about_meps/survey_back.jsp

+ See for example, Hadley and Holahan 2003. Long SK, Stockley, K et al. 2012. National Findings on Access to Health Care and Service for Non-elderly Adults Enrolled on Medicaid. MACPAC, Washington, DC, June.

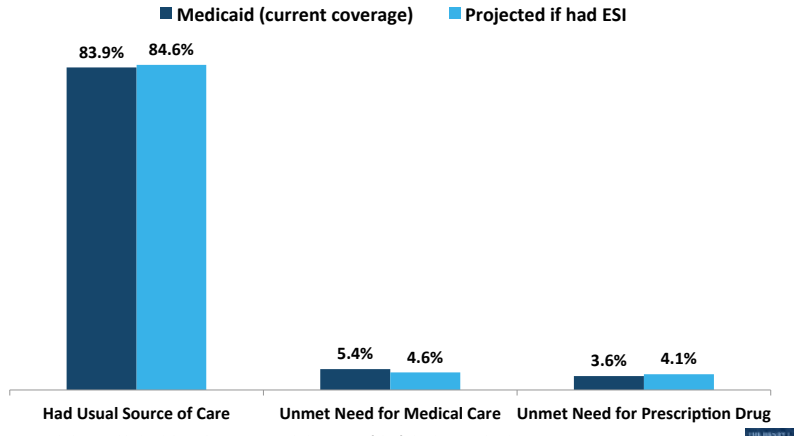
Results

Access and Use with Medicaid Coverage is Comparable to ESI Coverage

If adult Medicaid beneficiaries were instead covered by ESI, the analysis projects that their access to care would not be significantly different (Table 1 and Figure 1). For example, 83.9 percent of Medicaid beneficiaries reported having a usual source of care other than the emergency department (ED). If beneficiaries instead had ESI, it is projected that 84.6 percent would have a usual source care, a difference that is not statistically significant. They also would be no more or less likely to have an unmet medical care or prescription drug need.

Figure 1

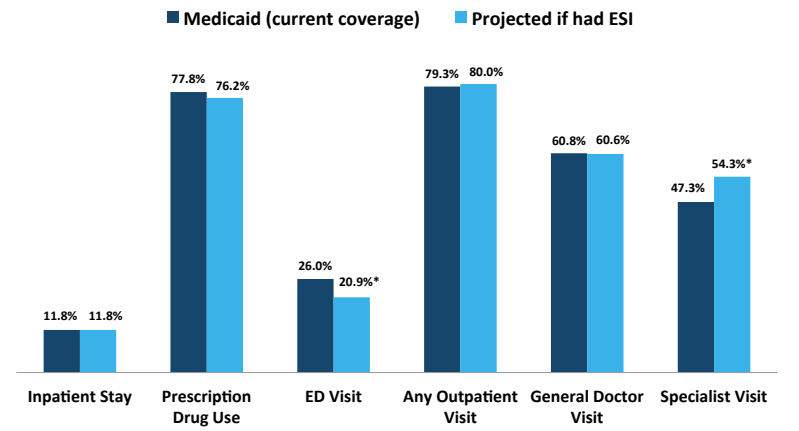
Projected Access to Health Care Services for Low-Income Medicaid Enrollees if Covered by ESI Instead



Notes: Includes nonelderly adults with incomes at or below 138% of the federal poverty level.
* Significantly different from zero at the 0.05 level, two-tailed test.
Source: Urban Institute analysis of 2003-2009 Medical Expenditure Panel Survey.

Figure 2

Projected Use of Health Care Services for Low-Income Medicaid Enrollees if Covered by ESI Instead



Notes: Includes nonelderly adults with incomes at or below 138% of the federal poverty level.
* Significantly different from zero at the 0.05 level, two-tailed test.
Source: Urban Institute analysis of 2003-2009 Medical Expenditure Panel Survey.

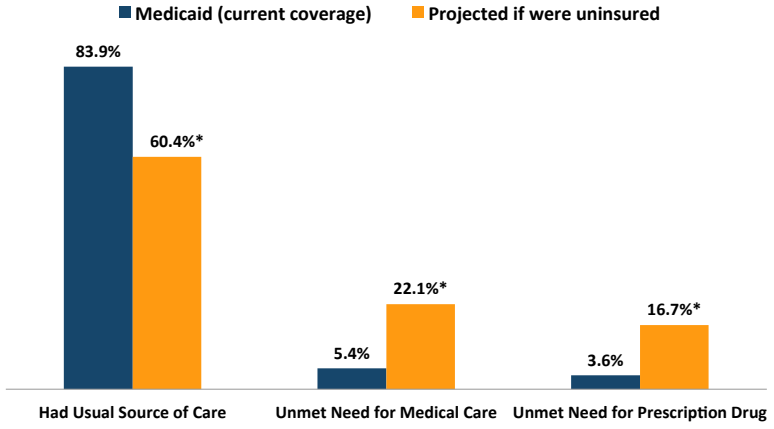
Similarly, Medicaid beneficiaries' likelihood of using basic health care services (e.g., primary care doctors, prescription drugs and inpatient care) and the level of that use would not differ significantly on most dimensions if they were covered instead by ESI (Table 1 and Figure 2). There were two exceptions to this pattern: If Medicaid beneficiaries were covered by ESI, their use of specialists is projected to be higher, and their use of the outpatient ED (that is, ED use not associated with an inpatient stay) is projected to be lower. The increased use of specialist care projected with ESI coverage is consistent with other research indicating challenges in Medicaid beneficiaries' ability to access specialty care due to lack of specialists willing to see Medicaid patients.[6] It could also reflect different plan structure and ability to directly access specialty care under Medicaid and ESI. The higher use of specialist care under ESI may also be a factor in the lower outpatient ED use for these patients, as the outpatient ED may be one strategy for obtaining specialist care under Medicaid.[7] Higher use of the ED among Medicaid enrollees could also reflect this population's higher severity of illness or difficulty managing illness, as most Medicaid enrollees' visits for emergency care are for urgent problems.[8] It is also possible that higher OOP costs for outpatient ED use under ESI relative to Medicaid contributes to the drop in outpatient ED use projected with ESI coverage.

Access and Use Is Substantially Better Under Medicaid Coverage Compared to No Coverage

The analysis also underscores the health care access that having Medicaid coverage affords program beneficiaries. If beneficiaries did not have Medicaid coverage and were instead uninsured, projections show that they would be significantly less likely to have a usual source of care and more likely to have unmet health care need (Figure 3 and Table 1). For example, while 83.9 percent of Medicaid beneficiaries report having a usual source of care, if they were uninsured, projections indicate that this would drop to 60.4 percent. At the same time, the share reporting unmet need for medical care and prescription drugs would be about four times higher if they had no insurance.

Figure 3

Projected Access to Health Care Services for Low-Income Medicaid Enrollees if Uninsured Instead

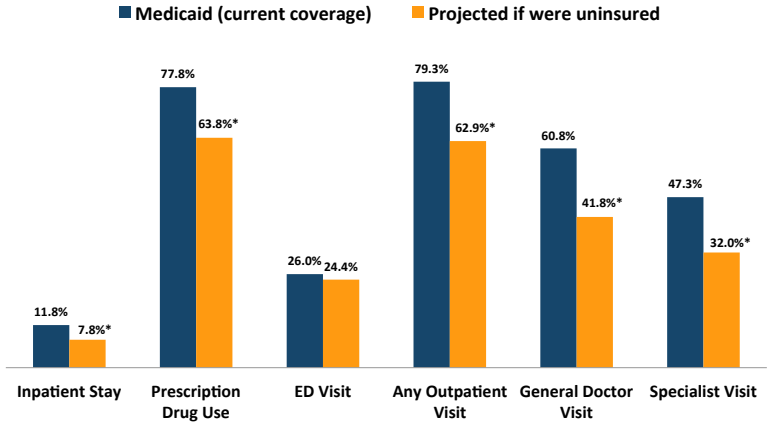


Notes: Includes nonelderly adults with incomes at or below 138% of the federal poverty level.
* Significantly different from zero at the 0.05 level, two-tailed test.
Source: Urban Institute analysis of 2003-2009 Medical Expenditure Panel Survey.

Furthermore, if Medicaid beneficiaries did not have their health insurance, projections indicate that the likelihood of their using health care services for all categories examined would be significantly lower, except for outpatient ED use, which would be unchanged (Figure 4). Likewise, their level of service use would drop significantly for all services except outpatient ED care (Table 1). This pattern could reflect the possibility that the uninsured substitute outpatient ED department for other services, bringing their ED utilization to a level similar to that of Medicaid enrollees. It could also indicate relative inelasticity of ED services, given that most ED visits are for urgent problems.[9]

Figure 4

Projected Use of Health Care Services for Low-Income Medicaid Enrollees if Uninsured Instead



Notes: Includes nonelderly adults with incomes at or below 138% of the federal poverty level.
* Significantly different from zero at the 0.05 level, two-tailed test.
Source: Urban Institute analysis of 2003-2009 Medical Expenditure Panel Survey.

Table 1: Projected Change in Health Care Service Use if Low-Income Medicaid Enrollees Had ESI Coverage or Were Uninsured (Regression-adusted estimates)

	Current Use [a]	Projected Use IF Had ESI Coverage	Difference	Projected Use IF Uninsured	Difference
N	4,704				
Health Care Access Over the Year (%)					
Had a usual source of care (excluding emergency department)	83.9%	84.6%	0.7	60.4%	-23.5 *
Unmet need for medical care	5.4%	4.6%	-0.8	22.1%	16.6 *
Unmet need for prescription drugs	3.6%	4.1%	0.5	16.7%	13.2 *
Any Health Care Use Over the Year (%)					
Any inpatient stay	11.8%	11.8%	0	7.8%	-4.0 *
Any outpatient emergency department visit	26.0%	20.9%	-5.1 ***	24.4%	-1.6
Any outpatient visit	79.3%	80.0%	0.6	62.9%	-16.5 *
Any general doctor visit	60.8%	60.6%	-0.1	41.8%	-18.9 *
Any specialist visit	47.3%	54.3%	7.0 ***	32.0%	-15.2 *
Any prescription drug use	77.8%	76.2%	-1.6	63.8%	-14.0 *
Level of Health Care Use Over the Year (%,#)					
More than one inpatient stay	3.5%	3.8%	0.4	2.1%	-1.4 *
More than one outpatient emergency department visit	8.9%	6.8%	-2.1 **	8.5%	-0.5
Number of outpatient visits	9.41	9.97	0.56	5.20	-3.76 *
Number of general doctor visits	2.21	2.11	-0.11	1.28	-0.93 *
Number of specialist visits	2.96	3.12	0.16	1.43	-1.34 *

Source: 2003-2009 Medical Expenditure Panel Survey (MEPS)

Notes: Low-income is defined as family income at or below 138% of the federal poverty level. Projections based on Medicaid enrollees in 2009. Use of outpatient emergency department includes use not associated with an inpatient stay. For details on the methods, see text and the technical appendix.

* (**) (***) Significantly different from zero at the .10, (.05), and (0.01) level, two-tailed test.

[a] The predicted values for current use vary slightly across model specifications comparing Medicaid to ESI and Medicaid to uninsured.

Costs per Enrollee are Lower under Medicaid Relative to ESI

The analysis indicates that if adult Medicaid beneficiaries instead had ESI coverage, their average health care costs would be significantly higher (Figure 5 and Table 2). Average total health care spending (excluding out-of-pocket spending) would be higher by $1,700, going from $6,052 to $7,752, over a 25 percent increase. Spending for most categories of health care services would go up significantly. The one exception is prescription drug spending, which would decline by $619, dropping from $1,862 with Medicaid to $1,243 with ESI.

Importantly, out-of-pocket (OOP) spending for health care services would also be higher if Medicaid beneficiaries were instead covered by ESI. Projections suggest that on average, beneficiaries' OOP spending would increase more than three-fold, going from $257 to $784. In 2009, $784 would account for over five percent of income for an individual at 138 percent of poverty, someone at the top of the income range for our sample. For people at lower incomes, the burden of OOP costs could be even more substantial: for an individual with income at 50 percent of poverty, $784 would account for over 14 percent of their annual income. OOP costs are higher for the subset of individuals with health limitations (data not shown).

Given that there were few significant differences in the expected level of service use between Medicaid and ESI coverage, the projected higher spending for health care services overall and across expenditure categories under ESI is likely explained by Medicaid's lower provider payment rates. Medicaid provider payment rates historically have been lower than those of Medicare or private insurance.[10] The finding also could potentially reflect higher intensity of service use during a given visit among those with ESI. The higher OOP spending associated with ESI coverage is

Table 2: Projected Change in Health Care Spending if Low-Income Medicaid Enrollees Had ESI Coverage or Were Uninsured

	Current Spending[a]	Projected Spending if Had ESI Coverage		Projected Spending if Uninsured	
		Level of Spending	Difference	Level of Spending	Difference
Total Health Care Spending over the Year, excluding OOP spending (2009$)	$6,052	$7,752	$1,700 ***	$2,698	-$2,561 ***
Total inpatient spending	$1,560	$3,204	$1,644 **	$537	-$1,013 ***
Total outpatient emergency department spending	$209	$342	$133 ***	$161	-$57 **
Total outpatient spending	$1,548	$2,304	$757 ***	$809	-$569 ***
Total general doctor spending	$246	$308	$63 **	$162	-$85 ***
Total specialist spending	$677	$1,165	$488 ***	$315	-$303 ***
Total spending on prescription drugs	$1,862	$1,243	-$619 ***	$836	-$956 ***
Out-of-pocket health care spending	$257	$784	$527 ***	$993	$753 ***

Source: 2003-2009 Medical Expenditure Panel Survey (MEPS)

Notes: Low-income is defined as family income at or below 138% of the federal poverty level. Projections based on Medicaid enrollees in 2009. Use of outpatient emergency department includes use not associated with an inpatient stay. For details on the methods, see text and the technical appendix.

* (**) (***) Significantly different from zero at the .10, (.05), and (0.01) level, two-tailed test.

[a] The predicted values for current use vary slightly across model specifications comparing Medicaid to ESI and Medicaid to uninsured.

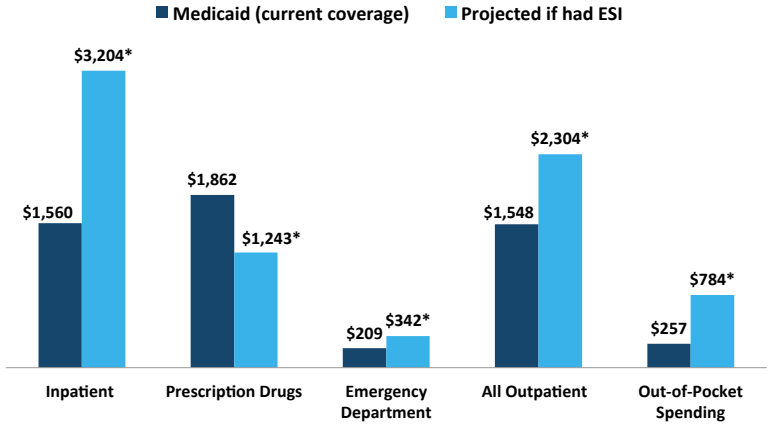
consistent with individuals bearing a larger financial responsibility for their care under private coverage relative to Medicaid, as would be expected with the greater use of co-payments and coinsurance under private coverage relative to Medicaid. This difference may be more pronounced in the future as deductibles and coinsurance have been rising in private health insurance coverage in recent years.[11]

Medicaid Coverage Provides Financial Protection for Individuals

If Medicaid beneficiaries in our sample were instead without insurance coverage, OOP spending would increase on average nearly four-fold, rising from $257 to $993 (Figure 6). While OOP costs would be higher for Medicaid beneficiaries if they were uninsured, spending on their health care services overall would be significantly lower as expected given their projected decrease in service use (Table 2). Total spending on average would drop by more than half, from $6,052 to $2,698.

Figure 5

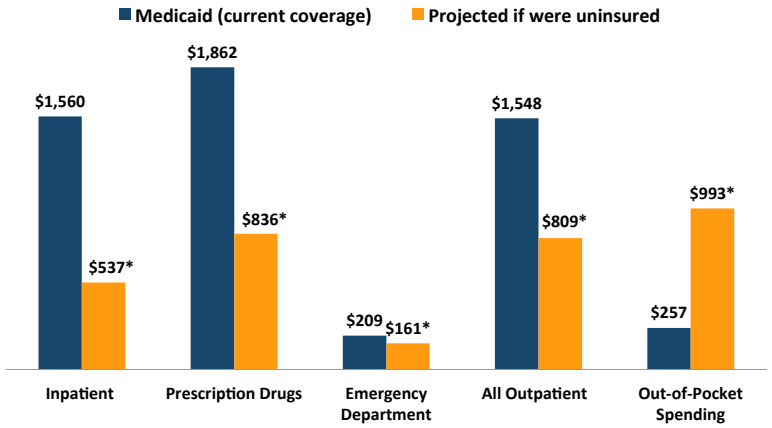
Projected Health Care Spending for Low-Income Medicaid Enrollees if Covered by ESI Instead



Notes: Includes nonelderly adults with incomes at or below 138% of the federal poverty level.
* Significantly different from zero at the 0.05 level, two-tailed test.
Source: Urban Institute analysis of 2003-2009 Medical Expenditure Panel Survey.

Figure 6

Projected Health Care Spending for Low-Income Medicaid Enrollees if Uninsured Instead



Notes: Includes nonelderly adults with incomes at or below 138% of the federal poverty level.
* Significantly different from zero at the 0.05 level, two-tailed test.
Source: Urban Institute analysis of 2003-2009 Medical Expenditure Panel Survey.

However, even with no health insurance many of these individuals would still incur health care costs. Considering the study sample is a low-income population (incomes less than 138 percent of poverty), the bulk of these costs likely would be uncompensated (e.g., free care provided in Federally Qualified Health Centers or charity care at hospitals) and borne by the health care system at large. Thus while Medicaid program costs would certainly decline if beneficiaries became uninsured, the nation's total health care bill would not decrease by nearly as much.

In addition, the lack of health care coverage also introduces several other costs to both individuals and their families (e.g., greater morbidity and premature mortality due to unmet health care needs, and financial stress), as well as spillover costs to the community (e.g., diminished population health, workplace productivity losses, and higher public costs associated with increased uncompensated care costs). These other costs also should be considered when figuring the benefits to Medicaid.

Discussion

Consistent with previous research, our study results indicate that Medicaid provides access to health care services comparable to that of ESI but at significantly lower costs, after controlling for differences in individual and local market characteristics. Moreover, compared to ESI coverage, Medicaid affords better financial protection from medical expenses for individuals and their families. Results demonstrate that if Medicaid beneficiaries instead had ESI coverage, their OOP spending would increase sharply —on average more than three-fold. For a low-income population, such an expense is a considerable financial burden, one that could cause individuals to delay getting needed health care.

This analysis also documents the benefits that Medicaid coverage provides in terms of access to health care services. We find that if Medicaid beneficiaries were instead uninsured (the likely insurance status for many program enrollees if they were disenrolled from Medicaid), their access to and use of health care services would decline significantly, while OOP spending would rise significantly. Unmet health care needs would also climb. At the same time, the results show that even without insurance individuals still incur health care costs, albeit lower than what they would have incurred with Medicaid coverage. The difference, however, is that health costs incurred by uninsured individuals often become providers' uncompensated care costs, costs that get absorbed into the health system in other ways. In addition, apart from the direct costs of care, there are broader individual and societal costs associated with being without health insurance.

While study findings offer new evidence that Medicaid is a cost effective program, the program has its challenges. One highlighted in study findings is the relatively high use of EDs by Medicaid beneficiaries. This finding could reflect barriers in accessing care in other settings,[12] particularly specialty care, as well as barriers related to provider participation. Providers are less likely to accept new Medicaid patients than patients with other insurance, and Medicaid participation among specialists has declined over time.[13] While the ACA seeks to improve Medicaid provider participation by temporarily increasing Medicaid payment rates for selected primary care services, this payment increase does not apply to specialty care. Further, additional efforts may be needed to address provider participation, since payment is only one factor in a provider's decision to see Medicaid patients.[14] Last, access is related to issues besides provider participation, such as provider office hours or travel distance to providers. Relatively higher ED use among Medicaid beneficiaries could also reflect higher severity of illness or more complex social challenges facing Medicaid enrollees that are not captured by our model.

This study has several limitations.[15] First, our ability to control for the severity of the health conditions among those with a chronic condition is limited, since MEPS does not include measures of severity of condition. However, sensitivity analysis (described in more detail in the appendix) indicates that health and disability controls included in the model do appear to capture differences in condition severity. Other limitations include lack of data to ascertain the quality or intensity of care provided or whether care is provided on a timely basis. Further, our focus on full-year coverage and full-year uninsurance provides the most comparable experiences across health insurance statuses in terms of health care access, use, and costs; however, it also may limit the generalizability of our findings to a population that includes those with part-year coverage. Finally, this analysis focuses on the association between insurance coverage and health care access, use, and costs and does not necessarily imply causality.

As federal policymakers debate what to do about the budget deficit and state policymakers address their budget shortfalls, Medicaid will undoubtedly be a major point of discussion. Further, as states consider next steps in extending coverage to their low-income population, including implementing the ACA Medicaid expansion, information

on the role that Medicaid plays in facilitating access is crucial. Results from this study suggest that policymakers considering options to cut the program or shift beneficiaries to private coverage should be mindful of the program's cost effectiveness and the financial benefits and access to care it provides to low-income Americans.

Technical Appendix

Data

The primary data source for this paper is the Household Component of the Medical Expenditure Panel Survey (MEPS), a nationally representative survey of the U.S. civilian, non-institutionalized population sponsored by the Agency for Healthcare Research and Quality (AHRQ) and the Centers for Disease Control and Prevention. Data from 2003 to 2009 were pooled to expand the sample size to increase the precision of the estimates. The study focuses on low-income adults ages 19 to 64 years (hereafter referred to as "adults") who had full-year Medicaid or full-year employer-sponsored insurance coverage, or who were uninsured for the full year. Low-income was defined as those with family incomes up to and including 138 percent of the federal poverty level (FPL). We exclude non-citizens and those who had coverage through Medicare (including those dually eligible for Medicare and Medicaid) from the analysis. We also excluded women who were pregnant over the period.

Access to health care during the year is measured by the presence of a usual source of care, unmet need for medical care, and unmet need for prescription drugs. Health care use is measured by the use of specific types of care: any hospital inpatient stay, any outpatient emergency department (ED) visit (i.e., an ED visit that is not associated with an inpatient stay), any office or outpatient ("office/outpatient") visit, and any prescription drug use. Within the office/outpatient visit category, we also examine any general doctor visit and any specialist visit. The level of health care use is measured by more than one hospital inpatient stay, more than one outpatient ED visit, number of outpatient visits, and the number of general doctor visits or specialist visits.

Health care spending is examined for each category of health care use, including prescription drugs. Total health care spending includes direct payments to health care providers, excluding (1) payments for over-the-counter drugs, alternative care services, and phone contacts with medical providers; (2) out-of-pocket spending by the individual; and (3) charges associated with uncollected liability, bad debt, and charitable care unless provided by a public clinic or hospital.[16] Out-of-pocket (OOP) spending, which is examined separately, is defined as direct payments by individuals to health care providers (including cost-sharing) for health services and does not include spending on health insurance premiums. Total health care spending and OOP spending are inflated to 2009 dollars using the historical medical care index from the Consumer Price Index (CPI) produced by the U.S. Bureau of Labor Statistics.

We supplement the MEPS data with characteristics of the local (county or county equivalent) health care market from the Area Resource File (ARF) compiled by the Health Resources and Services Administration. The geographic variables include measures of provider supply, health care cost variation, local economy and local demand for health services.[17] Due to the confidential nature of certain variables, access to the MEPS files merged with geographic data is available only within a restricted Data Center.

While MEPS is perhaps the nation's premier survey that captures Americans' health care cost and utilization, there are important services and payments that are not included in the survey, such as payments for over-the-counter drugs, durable and nondurable supplies, medical equipment, eyeglasses and dental expenses.[18] Payments for these services will likely affect those with ESI in particular as these services are often not covered by private insurance

plans whereas in state Medicaid programs they often are. Also, health care expenses associated with uncollected liability, bad debt, and charitable care are only included when provided by a public clinic or hospital.[19] Thus, to the extent that uninsured individuals incur such expenditures, we underestimate their health care expenditures. Finally, MEPS spending estimates exclude payments that are not tied to direct medical events. So, among others, Medicaid disproportionate share hospital payments and local subsidies to cover health care expenses incurred by the uninsured are not included, which will affect spending estimates for the uninsured.

Study Limitations

This study has several limitations that should be noted in interpreting the results. First, as noted in the main text, our ability to control for the severity of the health conditions among those with a chronic condition is limited, since MEPS does not include measures of severity of condition. To the extent that current Medicaid beneficiaries have more severe health conditions than uninsured adults or those with ESI, our control variables may not capture the severity of health conditions for the Medicaid beneficiaries relative to other groups. As a result, the impacts of shifting from Medicaid to uninsurance or ESI may be overstated. As one way to examine this issue, we looked at the extent to which the analysis comparing Medicaid to uninsurance was affected by those with Supplemental Security Income (SSI) or Social Security Disability Insurance (SSDI) status, as people enrolled in these programs are known to be severely disabled. We found that while these adults represent a sizeable share of the Medicaid population, results were not qualitatively different after removing them from the analysis. Thus, health and disability controls included in the model do appear to capture differences in condition severity.

Second, we examined potential for bias in the findings due to the possible endogeneity of Medicaid enrollment. This type of endogeneity bias could overstate the effect of Medicaid enrollment on use and spending if, for example, Medicaid-eligible individuals who expected to use services and incur spending have an increased incentive to enroll in Medicaid. We assess the potential impact of such endogeneity by applying a method similar to that employed by Currie and Gruber.[20] Using each state's Medicaid eligibility rules, we estimate the share of the national population within the applicable group (i.e., parents and childless adults) who would be eligible for Medicaid in each state and the District of Columbia in each year. The 2011 Current Population Survey's Annual Social and Economic Supplement (ASEC) and Medicaid eligibility rules available on Kaiser State Health Facts Online were used to calculate the state eligibility shares. This eligibility measure is highly correlated with actual enrollment but independent of other characteristics of the individual that likely affect his or her Medicaid enrollment decision. For this evaluation, we replaced the individual's enrollment status indicator with the applicable state eligibility measure. This revised model produced qualitatively similar results to those based on the estimates relying on the individual enrollment measure.

Model Specification

The multivariate analysis controls for individual and family demographic and socioeconomic characteristics; individual health status, conditions and limitations; and characteristics of the local community. Since perceived physical and mental health status are likely to depend on the level of service use, presenting a potential endogeneity problem in the analysis, we employed two summary measures that are based on self-reported status or impairment in physical, social, and mental functioning: the Physical Component Summary (PCS-12) and the Mental Component Summary (MCS-12). Appendix Table 1 provides a summary of the individual and family-level measures included in the analysis.

Analytic Methods

Binary outcome variables, such as the probability of a health care visit during the year, were estimated using logit regression. Count outcome variables, such as the number of doctor visits during the year, were estimated using zero-

inflated negative binomial (ZINB) models to account for the presence of large share of the sample with zero values and the skewness (a heavy right-hand tail) of the distribution.[21]

Expenditures for health care during the year were estimated using two-part models to account for both the large share of zero values and the skewness of the distribution. In the first part of the model, the use of any health care was estimated using logit regression, and in the second part, the level of expenditures conditional on use was estimated with Generalized Linear Models (GLM) in which we specify a Gamma regression model with a log link. The specification of the two-part GLM spending models was determined as follows. The link function, which characterizes how a linear combination of the explanatory variables relates to the prediction on the original scale, was determined using a Box-Cox test. The functional family was determined using the modified Park Test. The fit of the selected link and family were tested using multiple diagnostics: the Pregibon link test, the Ramsey Reset test, and the Hosmer-Lemeshow test. In cases where the Box-Cox Test or Park Test was inconclusive, we compared the fit of candidate links and families using the remaining statistics. In all cases we determined that a log link function was most appropriate. For the family, the Gamma distribution was generally superior to other family distributions. In a few cases when another family was found to be superior, the Gamma distribution produced similar results. We estimate all models with the same specification so that results are comparable across services and across the different spending components, which aggregate to total spending.

Given the focus of the paper, the findings from the multivariate analyses are presented as the average marginal effect of Medicaid coverage relative to employer-sponsored insurance coverage and to being uninsured. The average marginal effects were calculated as follows. For binary (e.g., any service use) and count (e.g., number of doctor visits) outcomes, average marginal effects are calculated using the margins command in STATA to compute discrete first-differences, producing the average effect of having an alternative type of coverage for the outcome. For the continuous variables in the spending models, which were estimated using two-part models, we used the parameter estimates from those models to calculate the expected value of spending for each observation under three scenarios—Medicaid coverage, employer-sponsored insurance coverage and uninsurance. We computed the standard error of the predicted difference in spending under those two scenarios using the method of balance and repeated replications (BRR).

All analyses are weighted using the MEPS sample weights and adjusted for the complex design of the survey. The models are estimated using STATA 12. Unless otherwise noted, all differences discussed in the text are significant at $\rho \leq 0.05$ or higher.

The research in this paper was conducted at the CFACT Data Center, and the support of AHRQ is acknowledged. The results and conclusions in this paper are those of the authors and do not indicate concurrence by AHRQ or the Department of Health and Human Services.

Appendix Table 1: Selected Characteristics of Low-Income Adults by Insurance Status, 2003-2009

	Medicaid	ESI	Difference	Uninsured	Difference
Sex					
Female	68.4%	52.0%	-16.4 ***	44.3%	-24.1 ***
Male	31.6%	48.0%	16.4 ***	55.7%	24.1 ***
Age					
19 - 29	30.1%	37.8%	7.7 ***	42.4%	12.3 ***
30 - 49	46.1%	33.5%	-12.6 ***	38.3%	-7.8 ***
50 - 64	23.9%	28.7%	4.9 ***	19.3%	-4.6 ***
Race					
Hispanic	16.2%	11.3%	-4.9 ***	16.9%	0.7
Black Or Other	36.7%	24.6%	-12.1 ***	27.2%	-9.5 ***
White	47.1%	64.1%	17.0 ***	55.9%	8.9 ***
Marital Status					
Married	22.1%	44.5%	22.4 ***	24.5%	2.4
Not Currently Married	77.9%	55.5%	-22.4 ***	75.5%	-2.4
Current Smoking Status					
Currently Smoking	40.8%	23.4%	-17.4 ***	42.0%	1.2
Dependents					
Any Dependent Children In Family	54.2%	40.9%	-13.3 ***	31.0%	-23.2 ***
Educational Status					
< High School	38.7%	18.0%	-20.7 ***	28.3%	-10.4 ***
High School Graduate Or Higher	46.5%	56.3%	9.8 ***	51.4%	4.8 ***
Income (% FPL)					
0 - <=50%	36.6%	29.5%	-7.1 ***	41.2%	4.7 ***
50 - <=100%	45.1%	27.6%	-17.6 ***	30.9%	-14.2 ***
100 - <=138%	18.3%	43.0%	24.7 ***	27.9%	9.6 ***
Health Status					
Excellent/Very Good	34.1%	60.2%	26.2 ***	50.2%	16.1 ***
Good	30.3%	29.2%	-1.1	32.0%	1.7
Fair/Poor	35.6%	10.5%	-25.1 ***	17.8%	-17.9 ***
Mental Health Status					
Excellent/Very Good	40.9%	66.5%	25.6 ***	57.1%	16.2 ***
Good	33.5%	26.5%	-7.0 ***	30.9%	-2.6 **
Fair/Poor	25.6%	7.0%	-18.6 ***	12.0%	-13.6 ***
Component Summary Scales of the SF-12					
Physical Component Summary (PCS)	43.76	51.15	738.8 ***	49.84	608.0 ***
Mental Component Summary (MCS)	44.45	50.48	603.3 ***	47.97	352.8 ***
Limitations					
Any Limitation During Year	53.3%	21.0%	-32.3 ***	28.6%	-24.6 ***
Cognitive Limitations	24.7%	4.8%	-19.9 ***	6.4%	-18.3 ***
Physical Functioning Difficulties	33.3%	11.6%	-21.7 ***	15.4%	-17.9 ***
Social Limitations	25.7%	6.2%	-19.5 ***	7.8%	-17.8 ***
Conditions					
Any Non-Chronic Condition	69.6%	59.8%	-9.8 ***	47.8%	-21.8 ***
One Chronic Condition	22.6%	24.1%	1.5	21.3%	-1.3
More Than One Chronic Condition	48.3%	31.6%	-16.7 ***	18.9%	-29.4 ***
Additonal Conditions					
Pregnant	0.0%	0.0%	0.0 ***	0.0%	0.0 ***
Asthma	12.2%	4.8%	-7.4 ***	4.1%	-8.1 ***
Diabetes	12.9%	6.9%	-6.0 ***	4.4%	-8.5 ***
Heart Disease	11.9%	6.2%	-5.7 ***	4.1%	-7.8 ***
Hypertension	24.2%	14.8%	-9.4 ***	10.1%	-14.1 ***
Back	50.7%	33.6%	-17.0 ***	27.4%	-23.2 ***
Bronchitis And Respiratory	34.8%	31.8%	-3.0 **	22.3%	-12.6 ***
Digestive/GI	36.4%	26.9%	-9.6 ***	13.9%	-22.5 ***
Mental Illness/Substance Abuse	37.8%	18.6%	-19.2 ***	17.4%	-20.5 ***
Other	53.0%	41.5%	-11.5 ***	27.7%	-25.3 ***
SSI/SSDI Status					
Yes	26.2%	2.6%	-23.6 ***	4.5%	-21.8 ***
Employment Status					
Anyone In The HIEU Employed Full-Time	13.2%	49.2%	36.0 ***	26.2%	13.0 ***

Source: 2003-2009 Medical Expenditure Panel Survey (MEPS)
[a] Total distribution does not sum to 100% due to missing data.
Notes: Family characteristics such as income are defined based on MEPS HIEU. For details on the methods, see text and the technical appendix.
* (**) (***) Significantly different from zero at the .10, (.05), and (0.01) level, two-tailed test.

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Endnotes

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