

## **The Impact of the Affordable Care Act Medicaid Expansions on the Sources of Health Insurance Coverage of Undergraduate Students in the United States**

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Anand, P., & Gicheva, D. (2022). The Impact of the Affordable Care Act Medicaid Expansions on the Sources of Health Insurance Coverage of Undergraduate Students in the United States. *Medical Care Research and Review*, 79(2), 299–307.  
<https://doi.org/10.1177/10775587211015816>

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### **Abstract:**

This article examines how the Affordable Care Act Medicaid expansions affected the sources of health insurance coverage of undergraduate students in the United States. We show that the Affordable Care Act expansions increased the Medicaid coverage of undergraduate students by 5 to 7 percentage points more in expansion states than in nonexpansion states, resulting in 17% of undergraduate students in expansion states being covered by Medicaid postexpansion (up from 9% prior to the expansion). In contrast, the growth in employer and private direct coverage was 1 to 2 percentage points lower postexpansion for students in expansion states compared with nonexpansion states. Our findings demonstrate that policy efforts to expand Medicaid eligibility have been successful in increasing the Medicaid coverage rates for undergraduate students in the United States, but there is evidence of some crowd out after the expansions—that is, some students substituted their private and employer-sponsored coverage for Medicaid.

**Keywords:** health insurance | Medicaid | postsecondary education | Affordable Care Act

### **Article:**

#### **Introduction**

College students are generally considered to be a healthy population, but recent evidence on their demand for medical care and university coverage requirements highlight their need for access to health insurance. For example, roughly one third of undergraduates exhibit symptoms of a mental health problem such as depression, generalized anxiety, or suicidality (Lipson et al., 2015), and 49% of 4-year institutions require health insurance for full-time students (Foss et al., 2014). Despite this need for health insurance, gaining access to affordable coverage can be a challenge for many college students. For example, students older than 25 years or whose parents are uninsured are not eligible for dependent coverage, which is likely the case for at least 30% of undergraduate students according to a 2019 survey conducted by the American College Health Association (2020).<sup>1</sup> While 82% of 4-year public institutions offered student health insurance plans in 2008, only 29% of community colleges did so (U.S. Government Accountability Office,

2008). Even when student health insurance plans are available, their cost can be a burden for students. The average annual cost of a student health insurance plan in 2014 was \$1,699 (Foss et al., 2014), which is almost half of the average tuition at community colleges or 20% of the average cost of on-campus room and board at public, in-state 4-year institutions (U.S. Department of Education, 2018). Employer-sponsored health insurance is typically only an option for students if they work full-time in addition to their studies, which may be detrimental to their academic progress. Despite these challenges, there has been little research conducted on the sources of health insurance coverage of college students. Our study seeks to fill this knowledge gap by exploring how policy efforts to expand Medicaid eligibility through the Affordable Care Act (ACA) affected the health insurance coverage of undergraduate students, with a particular focus on their sources of coverage. Understanding the relationship between expanding Medicaid eligibility and health insurance coverage has important implications not only for improving access to medical care while in college but also for potentially improving academic persistence, degree attainment, and long-term employment by reducing the financial burden associated with acquiring health insurance.

The ACA contained several provisions that could potentially affect the sources of health insurance coverage of undergraduate students, but two are particularly noteworthy. The first is the ACA's dependent coverage provision, which was implemented in 2010 and allows young adults up to the age of 26 years to obtain health insurance through their parents' plan. The second is the expansion of Medicaid eligibility to adults with family income below 138% of the federal poverty line in a subset of states. Although the ACA gave all states the option to expand Medicaid eligibility, only 22 states chose to do so in 2014; another 3 states expanded coverage in 2015, 2 states in 2016, 2 in 2019, and 2 in 2020. Numerous studies have shown that the ACA's dependent coverage provision resulted in a significant increase in Medicaid coverage for the young-adult population (Antwi et al., 2013; Cantor et al., 2012a; Chen, 2018; McMorrow et al., 2015; Sommers & Kronick, 2012). However, this provision may not have affected college students as much as the general young-adult population because, as aforementioned, we estimate that at least 30% of undergraduate students do not qualify for dependent coverage because they are older than 25 years or their parents do not have employer-sponsored health insurance. Another reason why this provision may not have affected undergraduate students is that most states already allowed for students who qualified as dependents to obtain health insurance through their parents (Cantor et al., 2012b). As a result, our article focuses on the impact of the ACA Medicaid expansions on undergraduate students, given that it was more likely to have an impact on their health insurance coverage than the dependency provision.

## New Contributions

Little is known about the sources of health insurance coverage of the undergraduate student population or how they were affected by the ACA Medicaid expansions. Recent work by McMorrow et al. (2015) and Gangopadhyaya and Johnston (2021) showed that the ACA Medicaid expansions increased overall coverage rates for the young-adult population (aged 19 to 25 years), but neither study focused on college students. The health insurance coverage decisions of undergraduate students, especially those from low-income families or who are older, are likely to differ from those of the young-adult population given their different coverage and employment options. A report by the Century Foundation provided initial descriptive statistics on the sources of health insurance for college students and showed that overall coverage is

higher for college students in states that expanded Medicaid through the ACA compared with students in states that did not expand Medicaid (Mishory et al., 2020). Our article will add to this literature by estimating the causal relationship between expanding Medicaid eligibility and the sources of health insurance coverage of undergraduate students after controlling for important factors that affected coverage over the same time and for time-invariant differences across states. We will examine how the magnitude of this relationship might have changed over time.

Our article will also examine whether undergraduate students replaced their private or employer-sponsored health insurance plans with the more affordable Medicaid health insurance (known as the “crowding-out” effect) after the ACA Medicaid expansion. This is an important question for students because substituting private or employer-sponsored coverage with Medicaid may be beneficial if reducing employment intensity allows them to spend more time on attaining their college degree and improves their long-term labor market outcomes. Switching from a private plan to Medicaid is also beneficial in terms of lower cost sharing, which may improve access to health care. The existing evidence of crowd out due to the ACA Medicaid expansions for the general population is mixed. There is some evidence of crowd out among those aged 19 to 35 years in Connecticut, which expanded Medicaid eligibility early (Sommers et al., 2014), and among childless adults in states that expanded Medicaid after 2014 (Kaestner et al., 2017), but other work found no evidence of crowd out after taking into account other components of the ACA, such as the introduction of state-based insurance exchanges (Frean et al., 2017). But this past work does not examine whether there was crowd out for undergraduate students, for whom the substitution of private or employer-sponsored coverage for Medicaid may be particularly beneficial.

## **Method**

### Data

Our primary source of data for this article is the American Community Survey (ACS), as provided by IPUMS USA (Ruggles et al., 2019). We use these annual data to explore whether expanding Medicaid eligibility through the ACA increased the overall health insurance coverage rates of undergraduate students and whether the increase in Medicaid coverage was accompanied by a decrease in coverage by private or employer-sponsored health insurance plans. The ACS is nationally representative and contains information on the state of residence, source of health insurance coverage, and educational enrollment of respondents. We use ACS data starting in 2008, which is the year questions about health insurance coverage were added to the survey, through 2019. The data are cross-sectional—that is, they do not follow respondents over time.

We limit our sample to respondents between the ages of 18 and 65 years who reported attending college as an undergraduate student in the 3 months preceding their interview. We exclude four states and the District of Columbia from all of our analyses because they had comparable coverage available prior to the ACA expansions. We also exclude respondents who received Supplemental Security Insurance benefits during the preceding year, because most already had access to Medicaid, as well as non-U.S. citizens, veterans, and active-duty military members, because these groups either have other sources of health insurance coverage or are unlikely to be eligible for Medicaid. After these restrictions, our sample consists of 971,455 student observations in ACA expansion states and 661,467 student observations in nonexpansion states.

Appendix Exhibit A (available in the online supplement) provides a full list of expansion states with their expansion dates and nonexpansion states. If a state expanded Medicaid eligibility between January and July of a given year, the expansion is considered active in that year because the state had expanded for at least half of the year; if a state expanded in August or later, the expansion is considered active in the following year. We also identify expansion states that had no coverage for childless adults prior to the expansion and those that had limited coverage available that was less comprehensive than after the ACA expansion, although we do not incorporate this distinction into our main analyses, given that many of the programs that were available for childless adults before the ACA were capped, closed, or otherwise very limited.<sup>2</sup> The two states that expanded in 2020 are considered nonexpansion states for the purposes of this study because their expansion occurred after the ACS data collection occurred. Given that we do not have any post-expansion year observations for the two states that expanded in 2019 (Maine and Virginia), we drop their 2019 observations and keep them in the sample as nonexpansion states during the rest of the sample period.

### **Analytic Approach**

The first step of our analysis is to present descriptive statistics on the demographics, academic characteristics, and source of health insurance coverage for our sample; these results use survey weights to be representative of the U.S. population of students. We show these characteristics separately for students in states that expanded Medicaid through the ACA versus those that did not expand Medicaid, before and after the expansion (between 2008-2013 and 2014-2019, respectively).

Next, we use an event study regression framework to estimate the effects of the ACA Medicaid expansions on overall health insurance coverage and the sources of coverage of undergraduate students by year. The sources of health insurance we examine are Medicaid, employer-sponsored coverage, and private direct coverage. The event study framework compares the health insurance coverage of students who live in states that expanded Medicaid in each year after the expansion with the coverage of students who live in states that had not expanded Medicaid eligibility as of that year, allowing the size of the effect to vary with the number of years since the expansion. The yearly effects are measured relative to the coverage in the year before the ACA Medicaid expansion. This strategy allows us to use undergraduate students in nonexpansion states as a control group for undergraduate students in expansion states, which are considered having received the “treatment” of expanding Medicaid through the ACA after controlling for various factors that may affect the expansion decision of the state. Trends in nonexpansion states should pick up changes due to other provisions of the ACA and due to variations in economic conditions such as those caused by the Great Recession. Our regression includes state-specific intercepts and further controls for age and age squared, gender, race and ethnicity, disability, type of college institution (public or private), being a single parent, marital status interacted with an indicator for the presence of children younger than 26 years in the household, year of data collection, and the state-level unemployment rate for that year. We also include indicators for each year prior to the Medicaid expansion, which allows us to confirm that there are no pre-expansion differences in health insurance trends in expansion versus nonexpansion states (i.e., the parallel trends assumption). The coefficients are unbiased estimates of the effect of the ACA Medicaid expansion on health insurance coverage as long as the state’s

decision to expand Medicaid is uncorrelated with the health insurance coverage in that state conditional on the explanatory variables included in the model. See Appendix Exhibit B (available in the online supplement) for a detailed description of our regression specification. All causal estimates presented in this study are unweighted (Solon et al., 2015); the inclusion of the survey weights (available from the authors on request) makes no qualitative difference in our results. We produce estimates for nonstudents for comparison purposes.

We also conduct subgroup analyses for students at public versus private institutions, students aged 26 years or older versus younger than 26 years, minority students (defined as Black, Hispanic, or other non-White, non-Asian race) versus nonminorities, students who are not working versus working part- or full-time, and students who are parents versus nonparents, given that some of these subgroups of students may face greater challenges in gaining access to or have greater need for health insurance than others. For example, students aged 26 years or older are at higher risk of being uninsured than those younger than 26 years because they are not eligible for dependent coverage through their parents. We do not examine trends by income because of endogeneity concerns—that is, it is possible that students adjust their income to qualify for Medicaid. To have a clear presentation of the subgroup results, we present the results of a difference-in-differences model that compares the health insurance coverage in expansion states versus nonexpansion states in the period after the ACA expansion compared with before. We do not present the effects separately by each year, but we do show the impacts in the year immediately after the expansion versus 2 or more years later. Graphs of the event study estimates for the subgroups can be found in Appendix Exhibit D (available in the online supplement).

In addition to estimating the relationship between expanding Medicaid eligibility and the sources of health insurance coverage of undergraduate students, we look for evidence that undergraduate students replaced their expensive private or employer-sponsored health insurance plans with the more affordable Medicaid health insurance (known as the “crowding-out” effect). While the ACS data are cross-sectional and do not follow students over time, we explore this question by comparing the change in Medicaid coverage rate versus other insurance types in expansion states relative to nonexpansion states, as well as whether there was an increase in overall health insurance coverage rates.

## Results

Table 1 shows the descriptive statistics for the sample of undergraduate students in the ACS before and after the Medicaid expansions (between 2008-2013 and 2014-2019, respectively) and by the expansion status of the student’s state of residency. Before the ACA Medicaid expansions, students were slightly less likely to have health insurance coverage in nonexpansion states (79%) compared with expansion states (82%), and Medicaid was slightly less prevalent in nonexpansion states (7%) compared with expansion states (9%). Medicare, private coverage, and employer-sponsored health insurance were similarly prevalent among undergraduate students in nonexpansion states and expansion states. Overall, the descriptive statistics suggest that the states that adopted the ACA Medicaid expansions were not vastly different than states that did not adopt the expansions in terms of the health insurance coverage of students.

After the ACA expansions, the difference in health insurance coverage between nonexpansion and expansion states grew, with 86% of undergraduate students in nonexpansion states having coverage after the ACA expansion compared with 92% in expansion states. The

difference in Medicaid coverage after the expansion was the most dramatic, with only 8% of undergraduate students in nonexpansion states having Medicaid coverage compared with 17% in expansion states. These results show that undergraduate students were major beneficiaries of the ACA Medicaid expansions. Employer-sponsored and private coverage rates increased less in expansion than in nonexpansion states, suggesting that there was some crowd out of private plans by Medicaid.

**Table 1.** Characteristics of Undergraduate Students in Expansion and Nonexpansion States, Before and After the ACA Medicaid Expansions.

Characteristics	Expansion states		Nonexpansion states	
	2008-2013	2014-2019	2008-2013	2014-2019
<b>Demographics and employment</b>				
Age 26 years or older	0.277	0.253	0.288	0.263
Single parent	0.080	0.062	0.092	0.070
Married parent	0.093	0.076	0.106	0.089
Married, no children	0.054	0.052	0.065	0.062
Female	0.569	0.556	0.585	0.569
Has disability	0.043	0.049	0.044	0.048
Age	25.1 (8.90)	24.6 (8.65)	25.2 (8.78)	24.8 (8.61)
White (non-Hispanic)	0.635	0.573	0.62	0.574
Asian (non-Hispanic)	0.063	0.074	0.027	0.034
Black (non-Hispanic)	0.114	0.108	0.197	0.192
Other race (non-Hispanic)	0.037	0.045	0.03	0.037
Hispanic	0.151	0.200	0.127	0.164
Employed part-time	0.272	0.288	0.244	0.258
Employed full-time	0.301	0.313	0.334	0.343
State unemployment rate	0.087 (0.021)	0.050 (0.011)	0.078 (0.019)	0.045 (0.011)
<b>Academic characteristics</b>				
Undergraduate at private university	0.212	0.202	0.192	0.181
Undergraduate at public university	0.788	0.798	0.808	0.819
<b>Health Insurance (HI) coverage</b>				
Has HI coverage	0.824	0.922	0.786	0.86
Covered by Medicaid	0.093	0.17	0.068	0.078
Covered by employer-sponsored HI	0.618	0.635	0.595	0.63
Covered by private HI	0.145	0.146	0.139	0.164
Covered by Medicare	0.007	0.008	0.007	0.007
Covered by VA HI	0.002	0.002	0.003	0.004
Covered by Tricare	0.016	0.017	0.031	0.033
N (unweighted)	486,788	484,667	329,227	332,240

Source: Authors' analysis of American Community Survey data, 2008-2019.

Note. The standard errors for the continuous variables are in parentheses. The calculations use individual survey weights. See Appendix Exhibit A (available in the online supplement) for a full list of expansion and nonexpansion states.

The differences in the demographic characteristics between students in expansion and nonexpansion states also tended to be small both before and after the ACA Medicaid expansions, with some notable exceptions. Before the ACA expansions, the average age of an undergraduate student in both expansion and nonexpansion states was approximately 25 years old, 57% to 59% were female, 4% had a disability, between 28% and 29% were aged 26 years or older, 15% to 17% were married (either with or without children), 8% to 9% were single parents, and 79% to 81% attended a public university. The largest difference between expansion and nonexpansion states was in their racial composition. Students were less likely to be Black and more likely to be Asian in states that expanded Medicaid (11% and 6%, respectively) compared with nonexpansion states (20% and 3%, respectively). This might be attributed to the large number of Asian students and relatively small share of Black students in California, which expanded Medicaid. Some of these demographic characteristics changed slightly after the ACA Medicaid expansions, but the changes were similar in expansion and nonexpansion states.

Graphs/Panels (a) through (d) of Figure 1 show the regression-adjusted difference in insurance coverage between undergraduate students in expansion and nonexpansion states in each year before and after the Medicaid expansions occurred relative to the year immediately before the expansion.<sup>3</sup> We also show the estimates for nonstudents for comparison purposes. The results in Graph/Panel (a) show a slight increase of approximately 2 percentage points in the overall rates of health insurance coverage for college students in expansion states compared with nonexpansion states in each year after the ACA Medicaid expansions compared with the year immediately before the expansion. This impact is slightly smaller than our estimated impact for nonstudents (although there is an overlap in the confidence intervals) and also smaller than the 3.6 decrease in uninsurance rates for all young adults estimated by a report by the Urban Institute (Gangopadhyaya & Johnston, 2021). There are also changes in the source of health insurance coverage for college students in response to the ACA expansions. Graph/Panel (b) shows that the trends in Medicaid coverage for college students were similar in expansion and nonexpansion states in the years leading up to the expansions (confirming the parallel trends assumption), but Medicaid coverage grew much faster in expansion states after the expansions. For example, the ACA expansion resulted in Medicaid coverage that was 3 percentage points higher in expansion states compared with nonexpansion states in the year of the expansion compared with the year immediately before the expansion, and this difference in trends grew to be 5 to 7 percentage points higher in each of the 5 years after the expansion. The effect of the ACA expansions on Medicaid coverage was larger for college students than for nonstudents, although once again there is an overlap in the confidence intervals. The growth in Medicaid coverage over time highlights the importance of examining the impact separately by year after the expansion date.

We also find that trends in private direct coverage and employer coverage for college students were similar in expansion states compared with nonexpansion states in the years leading up to the ACA Medicaid expansions (confirming the parallel trends assumption), but expansion states had lower private direct and employer coverage in the years afterward. In the year of and each of the 5 years after the ACA Medicaid expansions, the trends in employer coverage and private direct coverage were typically 1 to 2 percentage points lower in expansion states compared with nonexpansion states. This decrease in employer coverage and private direct coverage together with the increase in Medicaid coverage in expansion states compared with

nonexpansion states suggests that some students in expansion states substituted their private direct coverage or employer coverage for Medicaid coverage. The fact that the decrease over time in employer coverage and private direct coverage was larger for college students than for nonstudents, particularly in terms of employer-sponsored coverage, suggests somewhat larger levels of crowd out of employer-provided health insurance for college students than for the general population.

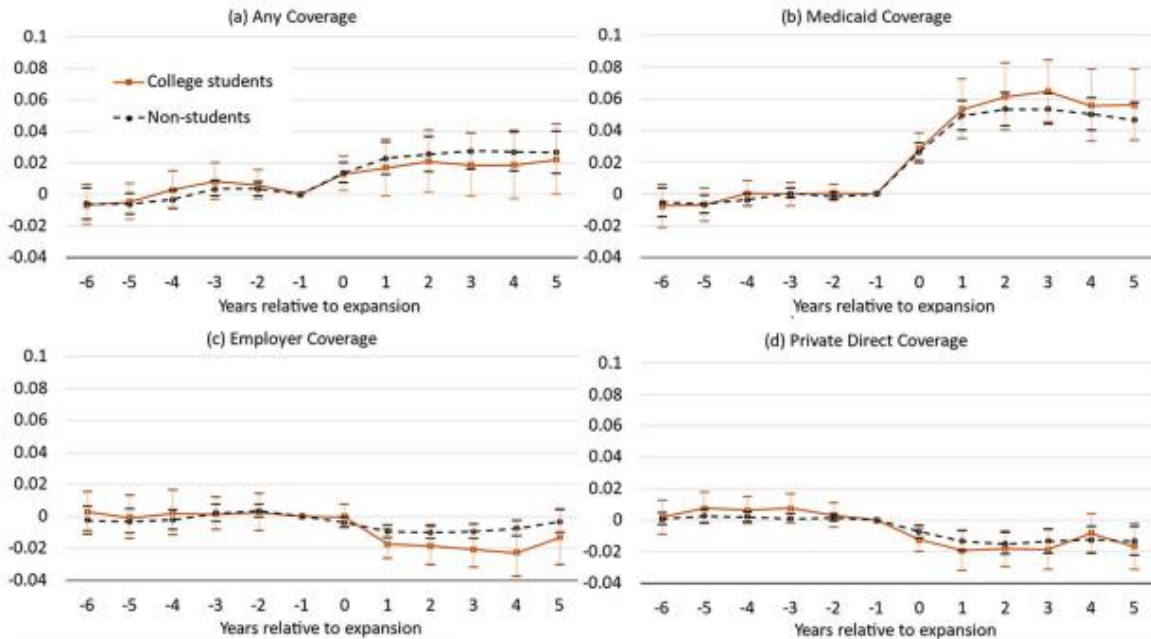


Figure 1. Difference in health insurance coverage of undergraduate students in states that expanded Medicaid eligibility relative to states that did not expand Medicaid, by year relative to expansion.

Source: Authors' analysis of American Community Survey data, 2008-2019.

Notes: This exhibit shows the estimated coefficients from a regression of the health insurance coverage type on a series of indicator variables for the number of years relative to the ACA Medicaid expansion. The error bars show the 95% confidence intervals. See Appendix Exhibit A for a full list of expansion and nonexpansion states, Appendix Exhibit B for details on the regression specification, and Appendix Exhibit C for the regression coefficients and standard errors (available in the online supplement).

We conduct a difference-in-differences analysis for the full sample and for subgroups defined by type of institution, age, minority status, employment status, and parental status; the results can be found in Table 2.4 The results for the full sample suggest that Medicaid coverage increased by 6 percentage points more in expansion states than in nonexpansion states after the first year of the expansion compared with before the expansion, while employer and private direct coverage each increased by 2 percentage points less in expansion states than in nonexpansion states. Taken together, these estimates suggest that about two thirds of the additional increase in Medicaid coverage may have come from crowd out of employer and private direct plans.

The subgroup coefficients suggest that students in public institutions, students older than 26 years, minority students, and students who work part-time (which we refer to as “high-



impact” subgroups) experienced a larger increase in health insurance coverage due to the ACA expansions compared with students at private institutions, students younger than 26 years, nonminority students, and students who were either not working or working full-time, although the event study graphs show that there is often overlap in the confidence intervals for the groups that are being compared (see Appendix Exhibits D1 through D4; available in the online supplement). The increase in health insurance coverage for the high-impact subgroups was primarily driven by their larger increases in Medicaid coverage. For example, students in public institutions, students who are aged 26 years or older, minority students, and students who are working part-time saw their Medicaid coverage increase by 7 to 9 percentage points more in expansion states compared with nonexpansion states 2 or more years after the expansion, while the other subgroups saw the gap increase by only 3 to 6 percentage points. The effects were larger 2 years after the ACA expansion than in the year immediately after, and the event study graphs in Appendix Exhibits D1 through D4 (available in the online supplement) show that these differences in Medicaid coverage tended to be statistically significant. The high-impact subgroups also experience a decrease in private coverage in expansion states compared with nonexpansion states that was slightly larger than what was observed for the other subgroups, although there is an overlap in the confidence intervals of high- and low-impact subgroups, and their decrease in employer coverage tended to be slightly smaller.

Nonminority	Not working	Working part-time	Working full-time	Parents	Nonparents
0.009*	0.009	0.016**	0.013†	0.010	0.014**
(0.005)	(0.007)	(0.007)	(0.004)	(0.008)	(0.006)
0.012*	0.018	0.022**	0.017**	0.005	0.023**
(0.006)	(0.011)	(0.010)	(0.006)	(0.010)	(0.010)
0.025†	0.029†	0.038†	0.026†	0.034†	0.032†
(0.005)	(0.007)	(0.006)	(0.005)	(0.008)	(0.007)
0.046†	0.058†	0.071†	0.052†	0.055†	0.064†
(0.008)	(0.013)	(0.012)	(0.009)	(0.014)	(0.011)
-0.001	-0.006	0.0003	0.001	-0.006	-0.001
(0.006)	(0.007)	(0.006)	(0.005)	(0.006)	(0.005)
-0.018†	-0.024†	-0.021†	-0.013**	-0.023**	-0.019†
(0.006)	(0.008)	(0.005)	(0.005)	(0.009)	(0.005)
-0.016†	-0.012	-0.021†	-0.015†	-0.016†	-0.016†
(0.006)	(0.008)	(0.005)	(0.005)	(0.004)	(0.005)
-0.017†	-0.013*	-0.029†	-0.023†	-0.026†	-0.020†
(0.005)	(0.007)	(0.008)	(0.005)	(0.005)	(0.007)
1,125,410	705,320	438,989	488,613	264,464	1,368,458

Type of coverage	Full sample	Public institutions	Private institutions	Age <26 years	Age 26+ years	Minority
Any coverage						
Year after the	0.012** (0.006)	0.018† (0.006)	-0.004 (0.004)	0.010 (0.007)	0.023† (0.006)	0.024† (0.008)
Expansion						
2+ years	0.018* (0.009)	0.025† (0.009)	-0.002 (0.008)	0.017 (0.011)	0.030† (0.008)	0.036† (0.011)
Postexpansion						
Medicaid coverage						
Year after the	0.031† (0.006)	0.035† (0.007)	0.018† (0.004)	0.025† (0.006)	0.049† (0.007)	0.045† (0.008)
Expansion						
2+ years	0.060† (0.011)	0.069† (0.012)	.033† (0.006)	0.053† (0.011)	0.088† (0.011)	0.092† (0.015)
postexpansion						
Employer coverage						
Year after the	-0.002 (0.005)	0.002 (0.004)	-0.013* (0.007)	-0.002 (0.006)	0.001 (0.006)	-0.001 (0.006)
Expansion						
2+ years	-0.020† (0.006)	-0.016† (0.006)	-0.030† (0.009)	-0.020† (0.006)	-0.017** (0.007)	-0.024† (0.007)
postexpansion						
Private direct coverage						
Year after the	-0.016† (0.005)	-0.017† (0.005)	-0.014* (0.007)	-0.014** (0.006)	-0.021† (0.004)	-0.015** (0.006)
Expansion						
2+ years	-0.021† (0.006)	-0.024† (0.005)	-0.011 (0.010)	-0.015** (0.006)	-0.038† (0.006)	-0.027† (0.008)
postexpansion						
N	1,632,922	1,270,090	0,362,832	1,201,030	431,892	507,512

Source: Authors' analysis of American Community Survey data, 2008-2019

Note. The standard errors for the estimates are in parentheses. This exhibit shows the estimated coefficients from a regression of the health insurance coverage type on a series of indicator variables for residing in a state that expanded Medicaid through the ACA in the year of the expansion and in later years. See Appendix Exhibit A for a full list of expansion and nonexpansion states and Appendix

Exhibit B for more details on the regression specification (available in the online supplement).

ACA = Affordable Care Act.

†p < .01. \*p < .1. \*\*p < .05.

## Discussion

Our article sheds light on the health insurance coverage decisions of undergraduate students and their response to gaining eligibility for Medicaid. Using data from the ACS, we provide evidence that undergraduate students in expansion and nonexpansion states were similar before the ACA Medicaid expansions, in that approximately 79% to 82% had health insurance coverage in the 2008-2013 period, with approximately 7% to 9% being covered by Medicaid. In

the 5 years after the ACA Medicaid expansions, the Medicaid coverage of undergraduate students increased by 5 to 7 percentage points more in expansion states than in nonexpansion states, resulting in 17% of undergraduate students in expansion states being covered by Medicaid in the 2014-2019 period compared with only 8% in nonexpansion states. This is similar to the 7.6 percentage point increase in Medicaid coverage due to the ACA Medicaid expansion estimated for all young adults over a similar time period (Gangopadhyaya & Johnston, 2021). However, there was also a decrease in employer and private direct coverage in expansion states compared with nonexpansion states for college students that is larger than for nonstudents. This suggests that some crowd out occurred, where some undergraduate students substituted private direct and employer coverage for more affordable Medicaid coverage. Our results also show that students in public institutions, students aged 26 years or older, minority students, and students working part-time experienced larger increases in Medicaid coverage as a result of the ACA Medicaid expansions than students in private institutions, students younger than 26 years, nonminorities, and students who were not working or working full-time. The high-impact subgroups also showed larger increases in overall health insurance rates compared with the other subgroups in the difference-in-differences estimates, although there was often an overlap in the confidence intervals between the groups when examining the yearly differences in coverage.

College students are often overlooked when it comes to their sources of health insurance coverage, perhaps because many assume they get dependency coverage through their parents. Our findings demonstrate that policy efforts such as the ACA Medicaid expansion can have a large impact on undergraduate students by increasing their Medicaid coverage. For students who were previously uninsured, this may have positive spillover effects if providing students with affordable health insurance improves their health, which improves their persistence in college and long-term employment outcomes. But there may also be positive spillover effects for those students who substituted private or employer coverage for Medicaid because, in addition to being more affordable, access to Medicaid may allow them to reduce their employment intensity in order to spend more time on their studies and may also improve their persistence, degree attainment, and long-term employment outcomes. The extent to which the ACA Medicaid expansions reduced employment for undergraduate students and improved their persistence is a question the authors are exploring in ongoing work (Anand & Gicheva, 2021).

## **Acknowledgements**

We would like to thank Nora Gordon and seminar participants at the University of Maryland, Elon University, the 2019 Carolina Region Empirical Economics Day, and the Association of Public Policy and Management Fall 2018 meeting for helpful comments.

## **Declaration of Conflicting Interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## **Funding**

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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## Supplemental Material

Supplemental material for this article is available online.

## Notes

1. We suspect that 30% is a lower bound estimate for the fraction of undergraduates who cannot get health insurance coverage through their parents given that students at community colleges are underrepresented in the American College Health Association survey.
2. Separate estimates for full- and partial-expansion states are available in Appendix Exhibit D6 (available in the online supplement). The results are very similar to the main results in the article.
3. The full regression estimates and standard errors for the event study models can be found in Appendix Exhibit C (available in the online supplement).
4. Graphs of the event study models can be found in Appendix Exhibit D (available in the online supplement).

## References

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