Center for Advancing Health Services, Policy & Economics Research
INSTITUTE FOR PUBLIC HEALTH | INSTITUTE FOR CLINICAL & TRANSLATIONAL SCIENCES | DEPARTMENT OF MEDICINE
WASHINGTON UNIVERSITY IN ST. LOUIS

September 2023

Initial View of the Medicaid Expansion and Public Health Emergency on Hospital Encounters in Missouri

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PURPOSE

An expansion of the Missouri Medicaid program was approved by voters in Missouri through the passage of a constitutional amendment in August 2020, later upheld by the Missouri Supreme Court in July 2021.[1] Expansion led to over 350,000 enrolled in the Adult Expansion Group (AEG) at its peak. [2] Evidence suggests that most of those in the AEG were previously uninsured, though some of them were reclassified from another Medicaid eligibility category during the Public Health Emergency (PHE).

Reductions in the number of uninsured in Missouri should have important impacts on the health care system, and the people covered by Medicaid. For the health care system, those in the AEG may previously have been receiving medical care, but as uncompensated care (services not paid for by private insurance, Medicare or Medicaid), which pose a burden for hospitals and health systems. An increase in the number in the AEG will also reduce the financial burden imposed on uninsured Missourians who would have paid out of pocket for the care they received in hospitals and from other providers.

This policy brief reviews changes in hospital encounters over time in Missouri, before and after the start of the Medicaid expansion, concentrating on emergency department (ED) encounters and inpatient (IP) encounters, and the "payer mix" of those visits, which is the source of payment the hospitals receive (e.g., private, Medicaid, Medicaid, and uncompensated).

BACKGROUND

When individuals who were previously uninsured obtain Medicaid coverage, this could have significant impacts on hospitals and the out-of-pocket costs for the uninsured. As in other states, it is expected that a high number of individuals could move from not having a financial source for their medical care to having Medicaid as their source, and the uninsured will see their out of pocket costs lowered. What complicates the story is Missouri is one of only three states that has expanded Medicaid during the COVID-19 pandemic. The pandemic led to the establishment of a public health emergency (PHE) in January 2020.[3] By executive order, any person who was put on Medicaid coverage after the PHE began could not be disenrolled during the PHE. This was most likely to affect populations who historically "churn" between Medicaid and being uninsured, especially pregnancy women, uninsured women, custodial parents and those in their families.

KEY FINDINGS

- To consider the effects of expansion, it's important to also consider the effects of Public Health Emergency (PHE) on the trends.
- After the PHE started the proportion of emergency department (ED) encounters financed by Medicaid rose by 14.9 percentage points, while the proportion of encounters financed by the uninsured has dropped by 14 percentage points from January 2020 to December 2022. Similar trends were observed for inpatient encounters.
- Before the pandemic started a higher proportion of ED and inpatient encounters were funded by Medicaid in rural areas in Missouri, but the gap between urban and rural areas narrowed almost completely for ED encounters during the PHE.
- Future work is needed to disentangle these trends.

Table 1. Total Statewide Missouri Hospital Encounters, and average monthly, 2017-2022				
	ANNUAL TOTAL		AVERAGE MONTHLY	
	Emergency department	Inpatient	Emergency department	Inpatient
2017	1,782,215	359,691	148,518	29,974
2018	1,704,664	355,567	142,055	29,631
2019	1,686,443	352,907	140,537	29,409
2020	1,453,482	322,833	121,124	26,903
2021	1,497,227	328,889	124,769	27,407
2022	1,490,709	312,459	124,226	26,038

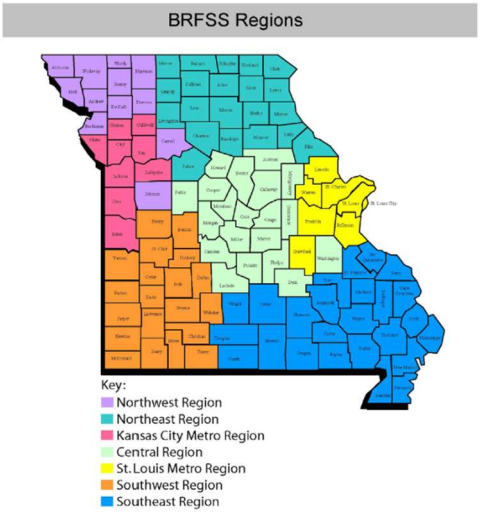
In Missouri, the number of people enrolled on Medicaid grew significantly – by over 600,000 to a record of 1.5 million during the pandemic. By federal law, the PHE was ended as of May 2023 and states were allowed to begin the "unwinding" process of restarting the annual renewal process to verify enrollment. This began in Missouri in spring 2023, with the first recipients affected by the end of June. The confluence of the PHE – which began in January 2020 – and the Medicaid expansion – which began in July 2021 – means that assessing the impact of the expansion itself will be difficult. Thus, for the purposes of this analysis, changes in Medicaid enrollment were reviewed in three different time periods: (1) before 2020 (pre-PHE), (2) from January 2020 to June 2021 (PHE period), and (3) July 2021 to the end of December 2022 (Expansion period). Moreover, the analysis here is limited to recipients aged 19-64, who could potentially be eligible for the Medicaid expansion.

DATA AND METHODS

This analysis was conducted of retrospective claims using data obtained from the Missouri Hospital Association and the Hospital Industry Data Institute, comprised of inpatient and outpatient hospital encounters from October 2015 to December 2022. The data included encounter, patient, hospital, and payer characteristics. After removing claims from non-residents of Missouri and those not within the age range of 19 to 64, encounters were aggregated by encounter type (emergency, outpatient, and inpatient) and payer type for the encounter at the year-month, region, and rurality level.

Using the patient's county, regions were defined according to the Behavioral Risk Factor Surveillance System (BRFSS) schema (see Figure 1). Rurality was determined using Urban Influence Codes to bifurcate counties by metropolitan and non-metropolitan status.[4] Payer mix proportions were calculated at various levels, including the year-month level, the year-month, region level, and the year-month, rurality level.

Figure 1. Regions of Missouri, according to the Behavioral Risk Surveillance Survey (BRFSS).

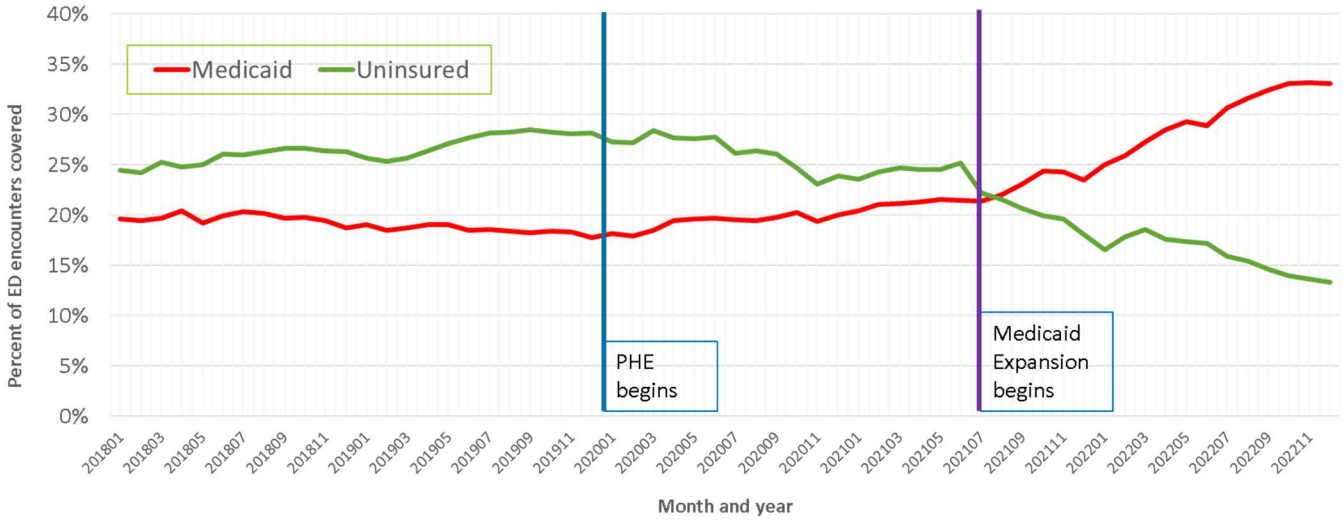


RESULTS

EMERGENCY DEPARTMENT ENCOUNTERS

The payer mix for Missouri hospitals shifted significantly since the pandemic started; the proportion of emergency department (ED) encounters financed by Medicaid has risen by 14.9 percentage points, while the proportion of ED encounters financed by the uninsured has dropped by 14 percentage points from January 2020 to December 2022 (Figure 2, other payers not shown in order to concentrate the view). Although this trend began during the PHE and before Medicaid expansion began, the trend continued after the Medicaid expansion began with the Medicaid share of the payer mix rising by 11.7 points, and the uninsured share dropping 8.8 percentage points from July 2021 to December 2022. These trends likely are associated with the rising number of people on Medicaid during this period; as noted above the number of Medicaid recipients rose 71 percent from January 2020 to December 2022.

Figure 2. Missouri Emergency Department Encounters, Payer Mix: Percent Covered by Medicaid and Percent Uninsured, Age 19-64 only



Missouri was one of only three states that expanded Medicaid after the pandemic began and the Public Health Emergency (PHE) was declared in January 2020 (the other two states were OK and NE).[5] Analysis indicates that a high percentage of those who were eventually a part of the expansion population came from those already enrolled in Medicaid, falling into four major categories: pregnant women, those in the uninsured women's services program, some custodial parents, and children who reach age 19.[6] People rolled into the adult expansion group from these groups likely became eligible for Medicaid during the PHE who would normally have churned off of Medicaid except that federal rules required states not to subject these enrollees to annual renewals. This means that disentangling the effects of the expansion from the PHE is difficult for these populations, though it can be concluded that changes in payer mix in the period January 2020 to June 2021 were due to the PHE, while changes after July 2021 were due to a mixture of expansion and PHE effects.

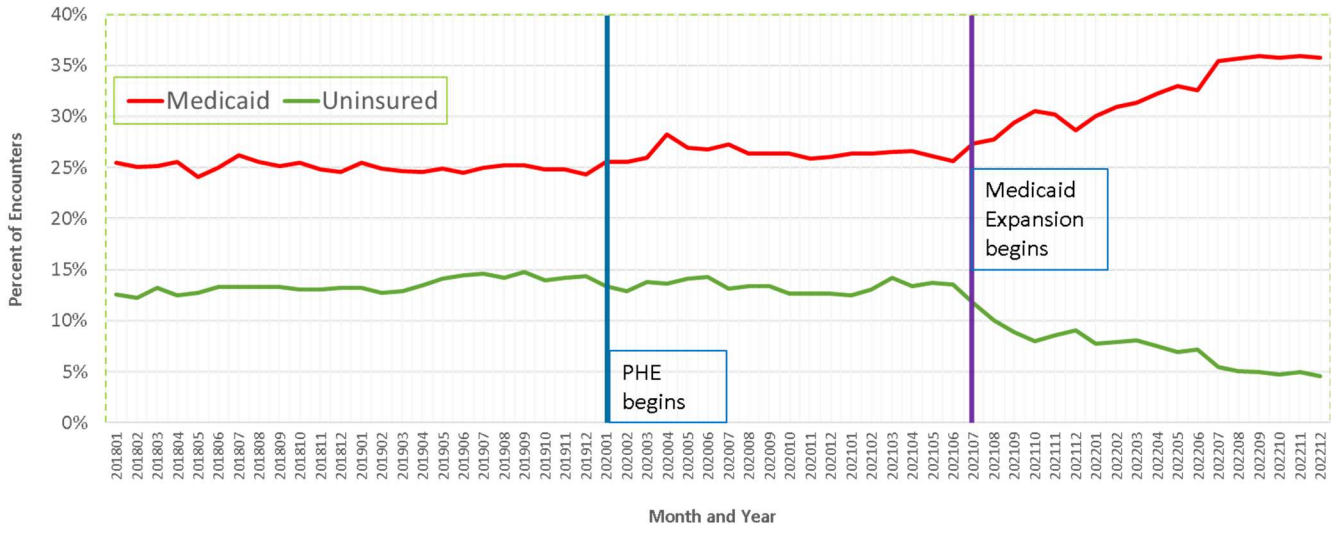
It is worth noting that there was a significant change in the number of ED and inpatient encounters in 2020, due to the onset of the pandemic (see Table 1), primarily because hospitals reduced the number of elective procedures almost immediately as the pandemic hit. ED encounters dropped 13.8 percent in 2020 (relative to 2019), and inpatient encounters dropped 8.5 percent. The trends show that this lowered the number of

encounters in 2020 considerably (especially in the spring of 2020, not shown here), but that the number of encounters rose after 2020, though not to the same levels as experienced prior to 2020. Thus, the payer mix described above relates to a share of a smaller number of patient encounters. Whether the expansion of Medicaid or the PHE had any effect on the number of encounters is a question to be considered in further research, but likely would require disentangling several effects, the effects of the pandemic itself, the growth in coverage for Medicaid recipients and other trends.

INPATIENT ENCOUNTERS

From 2020 to 2022 there has been a significant shift in the payer mix for inpatient (IP) encounters in Missouri hospitals; the proportion of IP encounters financed by Medicaid has risen by 10.2 percentage points, while the proportion of encounters financed by the uninsured has dropped by 8.8 percentage points from January 2020 to December 2022 (Figure 3). Although this trend began during the PHE and before Medicaid expansion began, the trend accelerated after the Medicaid expansion began with the Medicaid share of the payer mix rising by 8.4 points, and the uninsured share dropping 7.2 percentage points from July 2021 to December 2022. These trends obviously meant that recipients faced lower out of pocket costs, while hospitals likely could increase their reimbursement for IP encounters.

Figure 3. Missouri Inpatient Hospital Encounters, Payer Mix:
Percent Covered by Medicaid and Percent Uninsured, Age 19-64 only



DIFFERENCES BETWEEN URBAN AND RURAL AREAS

In considering the variation in how the PHE and Medicaid expansion is impacting hospitals and recipients, much attention has been paid nationwide to the differences between people living in urban and rural areas, since the rates of Medicaid coverage and uninsurance varies between urban and rural areas. Figure 3 shows that in general, a higher proportion of ED encounters were funded by Medicaid in rural areas in Missouri, as compared to urban areas prior to the start of the PHE, though there was less difference in uninsured

encounters. The trends shown in Figure 4 shows that over time the gap between urban and rural areas has narrowed almost completely for ED encounters, so that a similar proportion of rural and urban people are on Medicaid or uninsured by 2022. As shown in Figure 5, the gap between rural and urban areas was not as wide for inpatient encounters for the 2017-19 period, but the gap narrowed nearly completely by the end of 2022.

Figure 4. Missouri Emergency Department Encounters, Payer Mix, by Metro and Non-Metro: Percent Covered by Medicaid and Percent Uninsured, Age 19-64 only

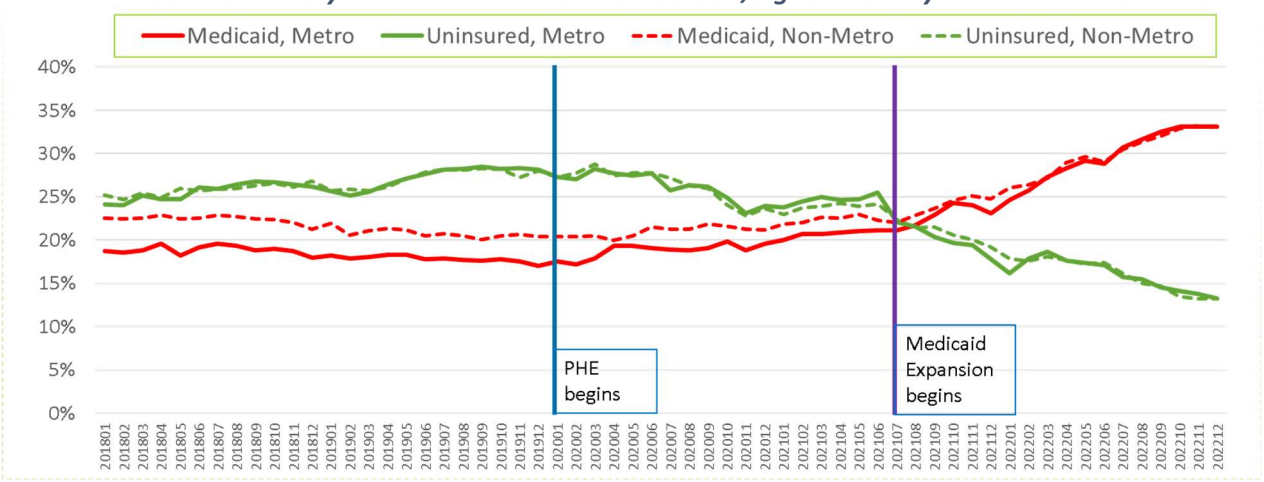
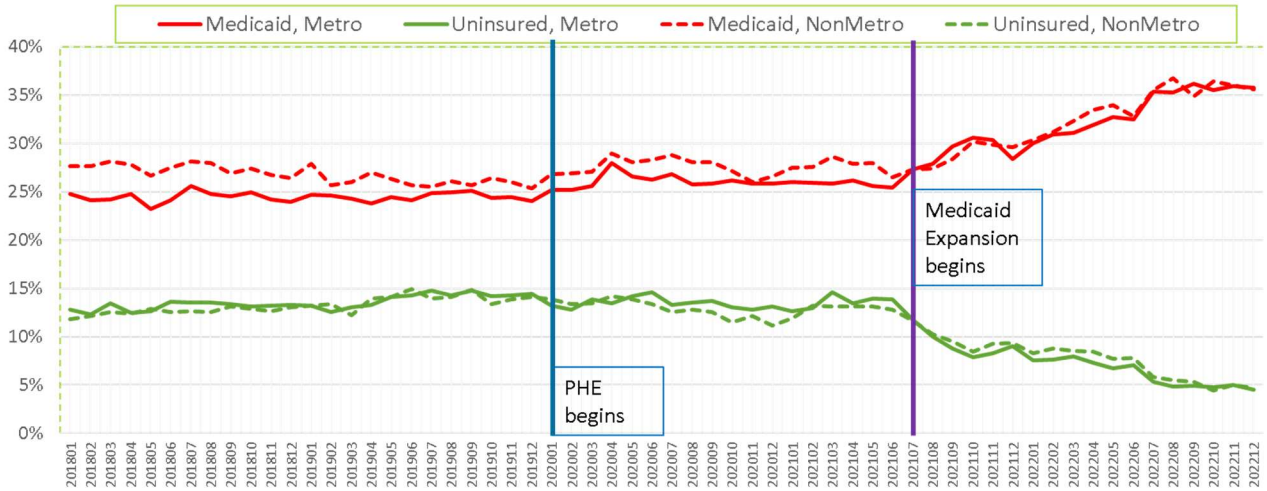


Figure 5. Missouri Inpatient Encounters, Payer Mix, by Metro and Non-Metro:
Percent Covered by Medicaid and Percent Uninsured, Age 19-64 only



REGIONAL DIFFERENCES IN ED AND INPATIENT ENCOUNTERS

How have changes in ED and inpatient encounters varied across the state? To consider this question, the encounters were analyzed by the seven BRFSS regions identified in Figure 1 above. There is some variation in how these changes are being experienced across the regions of the state, with the increases in the proportion of ED encounters ranging from 11.3 to 16.2 percent (average across the state, +14.9 percent), and the drop in the uninsured encounters ranging from -11.8 percent to -16.0 percent (average across the state, -14.0 percent) (see Table 3). There is also variation in how these changes are being experienced for inpatient

encounters across the regions of the state, with the increases in the proportion of ED encounters ranging from +7.7 to 12.4 percent (average across the state, +10.2 percent), and the drop in the uninsured encounters ranging from -8.1 percent to -12.0 percent (average across the state, -8.8 percent) (see Table 4). The differences in general suggest more significant impacts in areas with metro areas or higher population density, though the changes are not always clear.

Table 3. Missouri Emergency Department Encounters, and Percent Change in Payer Mix, by Region, 2019 through 2022, Age 19-64 only

Region	Payer: Medicaid	Payer: Uncompensated Care	Change in Encounters		
	2022:12 compared to 2020:1		2019	2022	AY2022 compared to 2019 (%change)
TOTAL	+14.9%	-14.0%	1,686,443	1,490,709	-195,734 (-11.6%)
Kansas City	+16.2%	-15.4%	371,107	349,384	-21,723 (-5.9%)
Northeast	+15.7%	-12.4%	56,776	55,844	-932 (-1.6%)
Southwest	+15.6%	-15.6%	275,199	228,800	-46,399 (-16.9%)
St. Louis	+14.7%	-12.2%	599,278	513,994	-85,284 (-14.2%)
Central	+13.9%	-15.0%	178,656	165,415	-13,241 (-7.4%)
Southeast	+12.3%	-16.0%	152,612	128,765	-23,847 (-15.6%)
Northwest	+11.3%	-11.8%	52,815	48,507	-4,308 (-8.1%)

Table 4. Missouri Emergency Department Encounters, and Percent Change in Payer Mix, by Region, 2019 through 2022, Age 19-64 only

Region	Payer: Medicaid	Payer: Uncompensated Care	Change in Encounters		
	2022:12 compared to 2020:1		2019	2022	AY2022 compared to 2019 (%change)
TOTAL	+10.2%	-8.8%	352,907	312,459	-40,448 (-11.5%)
Southwest	+12.4%	-12.0%	55,319	49,010	-6,309 (-11.4%)
Kansas City	+11.6%	-8.9%	70,551	62,822	-7,729 (-11.0%)
Central	+10.9%	-7.8%	36,637	32,816	-3,821 (-10.4%)
St. Louis	+9.0%	-7.7%	130,925	118,249	-12,676 (-9.7%)
Southeast	+8.7%	-10.7%	32,857	26,964	-5,893 (-17.9%)
Northeast	+8.4%	-4.8%	13,770	11,722	-2,048 (-14.8%)
Northwest	+7.7%	-8.1%	12,848	10,876	-1,972 (-15.3%)

IMPLICATIONS AND LIMITATIONS

This brief considers the effects of the changes in payer mix for encounters with hospitals in Missouri over the period before the pandemic, as the pandemic and PHE began, and then as the Medicaid expansion began. As expected, the percentage of inpatient and emergency department encounters financed by Medicaid increased notably during the expansion period. This likely means that the financial status of hospitals and previously uninsured persons improved as a result of these coverage changes.

Future work will need to be done to explore important aspects of the impacts of the expansion on individuals, providers and others. For example, future work will seek to explore the changes in access and affordability by the diagnosis of the enrollee. Are there particular impacts on individuals with certain common medical conditions (e.g., diabetes, asthma, heart disease, behavioral health, COVID-19)? In this work, analysis will explore whether the expansion reduced "potentially preventable emergency room encounters," defined as encounters when a patient goes to an emergency room for a health condition that could have been treated in a non-emergency setting or prevented by keeping them healthier earlier on, noting that encounters in the ED are more expensive than prevention visits.

Second, future analyses will explore the effects of changes in enrollment in Missouri on health disparities. In particular, the analysis will further explore differences between urban and rural areas, as well as differences by the social determinants of the Medicaid enrollees, based on the characteristics of the area where they live, as well as the demographics available for the recipient in the data (e.g., age and gender).

Finally, future analyses will need to explore some of the unique challenges the expansion in Missouri creates.

In particular, Missouri was one of only three states that expanded Medicaid during the pandemic (the other two states were OK and NE). Since this analysis shows that a high percentage of those who were eventually a part of the expansion population came from those already on Medicaid, this means that disentangling the effects of the expansion from the PHE is difficult for the period January 2020 to June 2021, and it should be concluded that many of those on Medicaid during that period were eventually part of the expansion population (especially pregnant women, uninsured women, some custodial parents, and children who turned age 19). Further analysis will need to be done to disentangle these population groups from other groups who became part of the expansion population after July 2021, and comparisons with other states will likely be the best way to complete that analysis, comparing Missouri with other expansion and non-expansion states.

Despite some difficulties in disentangling the effects of the Medicaid expansion from other changes, the results here do show that the expansion has had the intended effect of shifting a significant percentage of recipients from the uninsured (uncompensated care) population to Medicaid. And these results should cause some improvement in hospital finances, and reduce the out-of-pocket burden on recipients, who previously had to pay a portion of their care.

REFERENCES

[1] Missouri Supreme Court: https://www.courts.mo.gov/file.jsp?id=178955

[2] See Missouri Medicaid Enrollment Dashboard: https://publichealth.wustl.edu/items/missouri-medicaid-enrollment-tracking-dashboard/. Under expansion the Adult Expansion Group (AEG) includes adults aged 19-64 earning up to 138% of the federal poverty line (FPL; $30,305 for a family of three.)

[3] Administration for Strategic Preparedness and Response, "Determination That a Public Health Emergency Exists," https://aspr.hhs.gov/legal/PHE/Pages/2019-nCoV.aspx

[4] Urban Influence Codes are determined by the U.S. Economic Research Service, U.S. Department of Agriculture, found at: https://www.ers.usda.gov/data-products/urban-influence-codes/. Using UIC, codes of 1-2 are classified as metropolitan counties, and codes 3-12 are nonmetropolitan counties.

[5] Kaiser Family Foundation, "Status of State Medicaid Expansion Decisions," https://www.kff.org/medicaid/issue-brief/status-of-state-medicaid-expansion-decisions-interactive-map/

[6] Unpublished analysis by the University of Missouri showed that 45% of those who qualified for the Medicaid expansion by the end of 2022 were already enrolled in Medicaid when they moved into the adult expansion group (AEG) in those categories: uninsured women's health, pregnant women, custodial parents, or children who reached age 19.

*The views and opinions expressed in this fact sheet are those of the authors and do not reflect the official policy or position of Washington University.

This research was supported by Missouri Foundation for Health. The Foundation is building a more equitable future through collaboration, convening, knowledge sharing, and strategic investment. Working in partnership with communities and nonprofits, MFH is transforming systems to eliminate inequities within all aspects of health and addressing the social and economic factors that shape health outcomes. Learn more at mffh.org.

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