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Effects of the Medicaid Expansion and Unwinding on Hospital Encounters in Missouri, 2018-24

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PURPOSE

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, Medicare, Medicaid, and uncompensated). Analysis of how changes in policy impact the payer mix (e.g. the expansion of Medicaid, the PHE, the unwinding) over time is important for two reasons. First to provide an understanding of how the out of pocket burden for patients may have changed over time, since a reduction in encounters that are uncompensated (and an increase in encounters covered by Medicaid) indicates a decreased burden on patients who would have to pay for these encounters. Second, for hospitals, a decline in uncompensated care will reflect an improvement in hospital margins (the net revenues of hospitals).

BACKGROUND AND RATIONALE

Voters approved expansion of the Missouri Medicaid program 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 the people in the AEG were previously uninsured, though some of them were reclassified from another Medicaid eligibility category during the Public Health Emergency (PHE). The PHE began January 2020, and ended mid-2023, after which Medicaid enrollment dropped during an "unwinding" period, when some of those on Medicaid may have become uninsured.

Reductions in the number of uninsured in Missouri should have important impacts on those on Medicaid – reducing their out-of-pocket costs – and on the health care system, reducing uncompensated care. Those in the AEG may previously have been receiving medical care despite lacking insurance coverage, posing a big out of pocket burden on the uninsured to the extent they pay for the services, or it may lead to delays in seeking care. If care is provided, the care is classified by the hospital as uncompensated care (services not paid for by private insurance, Medicare or Medicaid), a measure of the burden of the uninsured on hospitals.

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 that

KEY FINDINGS

- The share of Emergency department (ED) and inpatient (IP) encounters in Missouri hospitals covered by Medicaid and other payor sources changed markedly over the 2020-2024 period, aligned with specific phases of policy implementation since 2019:
  - Prior to the public health emergency (PHE), which began January 2020; start of the PHE, January 2020 to May 2021; continuing PHE and start of Medicaid expansion implementation, June 2021 – May 2023; unwinding from PHE, June 2023 – May 2024, and post-unwinding, June 2024 – December 2024.
- The share of ED and IP encounters increased by more than 8.0% and uninsured rates decreased by over -7.0% between the beginning of the Medicaid expansion and the end of the PHE.
  - In contrast, the share of Medicaid encounters decreased by about -2% and uninsured rates increased by more than 1% during the Unwinding period.
  - After the unwinding period, the share of Medicaid encounters continued to decrease by more than -1% and the uninsured share also dropped by about -0.5%, with an increased share of Commercial encounters (more than 0.8% increase) during this period likely offsetting uninsurance caused by the unwinding.
- The gap between the share of encounters covered by Medicaid in rural and urban areas narrowed during the Expansion period but widened shortly before the Unwinding began.
- Regions of the state experienced similar overall increases in ED encounters and decreases in IP encounters between 2021 and 2024, in line with national trends in hospital utilizations.
- Regions of the state experienced similar changes in the share of encounters covered by Medicaid during the 2021 and 2024 period.

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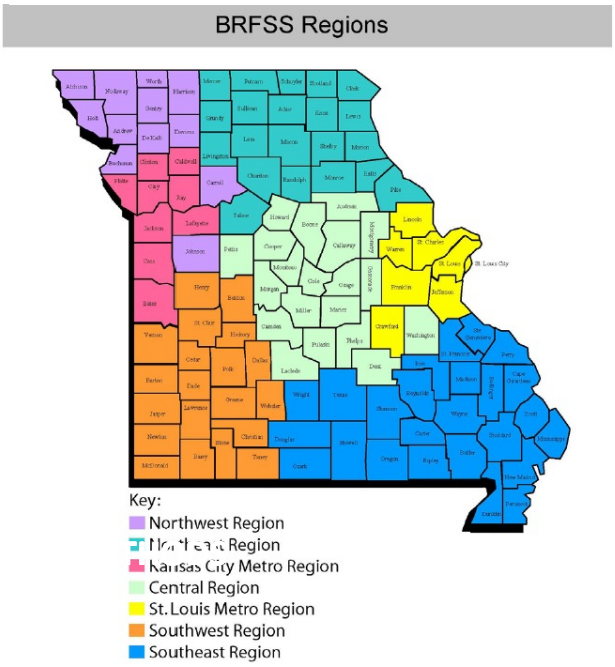
Missouri is one of only three states that has expanded Medicaid during the COVID-19 pandemic. The pandemic led to the establishment of a public health emergency (PHE) in January 2020.[3] By executive order, any person who was put on Medicaid coverage after the PHE began could not be disenrolled during 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.

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 emergency outpatient hospital encounters from January 2019 to December 2024. 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 (age range chosen to align with the group eligible for the Medicaid expansion), 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 (**Figure 1**). Rurality was determined by using Urban Influence Codes to differentiate counties by rural and urban 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 Factor Surveillance Survey (BRFSS).*



While we explore changes over time, we also present the findings aligned with five distinct phases representing key policy changes over time:

- prior to the public health emergency (PHE), which began January 2020;
- start of the PHE, January 2020 to May 2021;
- continuing PHE and start of Medicaid expansion implementation, June 2021 – May 2023;
- unwinding from PHE, June 2023 – May 2024
- post-unwinding, June 2024 – December 2024

RESULTS

Total Emergency Department (ED) and Inpatient (IP) Hospital Encounters. Table 1 lists total annual and monthly ED and IP visits from 2019 – 2024. Missouri outpatient emergency department (ED) and inpatient (IP) hospital visits dropped by -13.6% and -8.2%, respectively, from 2019 to 2020, reflecting the PHE, which began in January 2020. Missouri Medicaid expansion raised the annual income limit for eligibility and went into effect in July 2021, increasing the number of non-disabled adults aged 19-64 who were eligible for Medicaid. The PHE expired in May 2023, ending federal Medicaid continuous coverage requirements. Importantly, between July 2021 and May 2023, during the Expansion period and prior to the beginning of the unwinding from the PHE, ED and IP visits rose by 7.5% and 9.9% (data not shown in in the table for clarity), respectively.

Table 1. Total statewide Missouri hospital encounters, and average monthly, 2019-2024

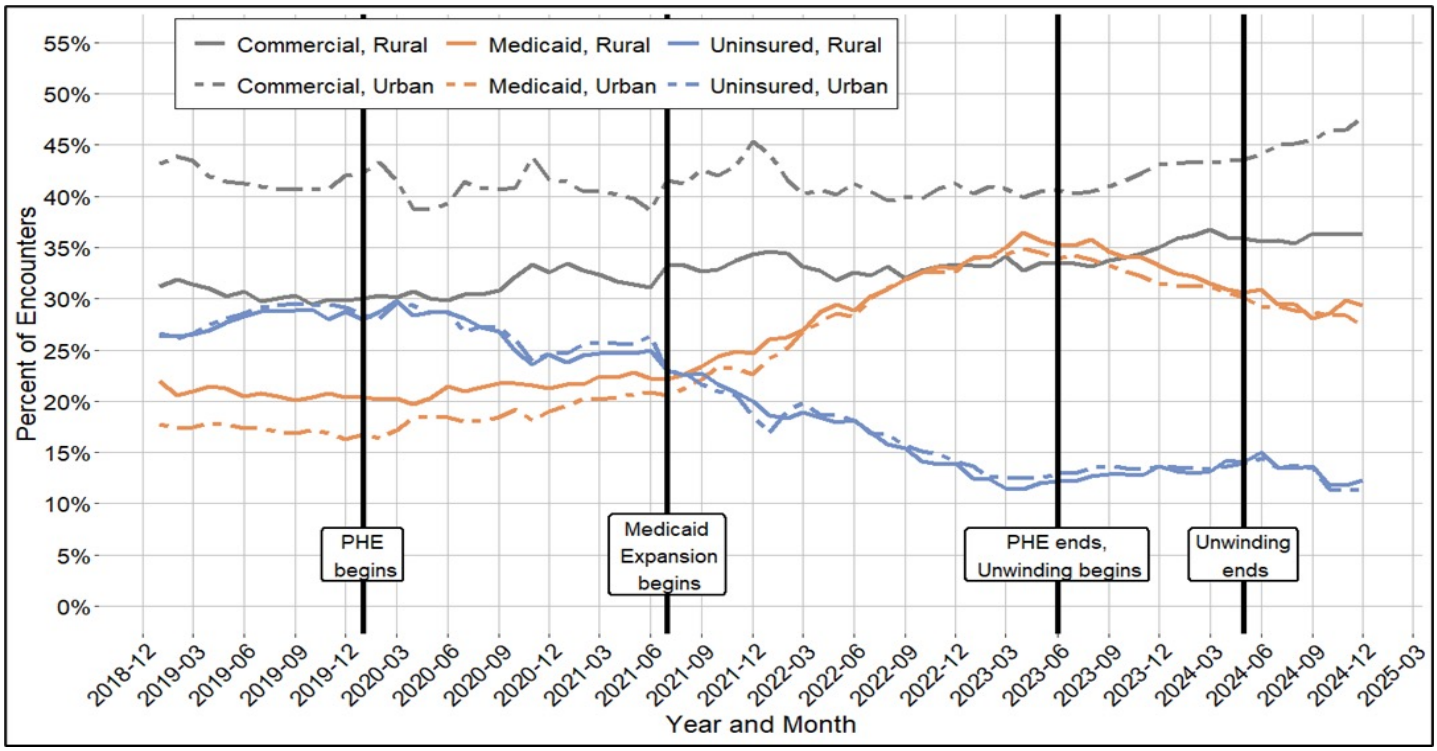
	Annual Total		Average Monthly		Percent change, year to year	
	Emergency Department	Inpatient	Emergency Department	Inpatient	Emergency Department	Inpatient
2019	1,542,890	362,748	128,574	30,229		
2020	1,333,741	333,048	111,145	27,754	-13.6%	-8.2%
2021	1,374,469	340,205	114,539	28,350	3.1%	2.1%
2022	1,365,723	323,004	113,810	26,917	-0.6%	-5.1%
2023	1,400,610	325,101	116,718	27,092	2.6%	0.7%
2024	1,432,276	328,635	119,356	27,386	2.3%	1.1%

The unwinding of the PHE began on June 1, 2023 (completed over 12 months), determining whether those on Medicaid were still eligible for the program, removing individuals who remained enrolled due to the PHE but who were otherwise ineligible. All 1.5 million Missouri Medicaid recipients were subject to reverification during the unwinding, and roughly 26% of Medicaid recipients lost coverage during that time.[5] Between June 2023 and May 2024 (the unwinding period), ED and IP visits rose by 4.5% and 3.7%, respectively. Since the unwinding ended in June 2024, and the typical annual redetermination process resumed ED and IP visits rose by 3.9% and dropped by -0.5%, respectively, by December 2024 (data not shown in in the table for clarity).

Medicaid and Commercial Coverage and Non-coverage (Uninsured) of ED Hospital Encounters in Rural and Urban Regions. Figure 2 shows the percentage of ED outpatient encounters, by "payer mix", that is, paid by Medicaid, commercial insurance and uncompensated (uninsured). In order to concentrate on the categories that show major changes during the analysis period, encounters covered by other payers are not shown in the graphs. Between January 2019 (prior to the PHE), and June 2021 -- during the PHE, but prior to Medicaid expansion -- the share of ED encounters financed by Medicaid rose by 2.6 percentage points, while the share of uninsured ED encounters dropped by -0.5 percentage points, averaged across rural and urban areas. During this period, commercial coverage of ED encounters dropped by -3.8 percentage points, averaged across rural and urban areas, most likely resulting from economic factors relating to the pandemic. Medicaid coverage during this period was greater in rural areas compared to urban regions while uninsured rates were similar in rural and urban regions. By contrast, commercial coverage was greater in urban areas compared to rural regions (**Figure 2**).

Between July 2021, when the Medicaid expansion began, and May 2023, just prior to unwinding from the PHE, the Medicaid share of ED outpatient visits rose by 13.8 more percentage points, and the uninsured share dropped by -10.6 more percentage points, averaged across rural and urban areas. During this period, commercial coverage dropped by -0.7 percentage points, averaged across rural and urban areas. The gap in Medicaid share between rural and urban regions narrowed during much of this period but began to widen again, such that the Medicaid share was greater in rural compared to urban areas beginning in March 2023. Throughout the analysis period, the share of encounters that were Uninsured remained similar in urban and rural areas and the commercial share remained greater in urban compared to rural areas (**Figure 2**).

Figure 2. *Coverage of ED outpatient encounters by Medicaid, commercial and uninsured in rural vs. urban areas, 2019-2024.*

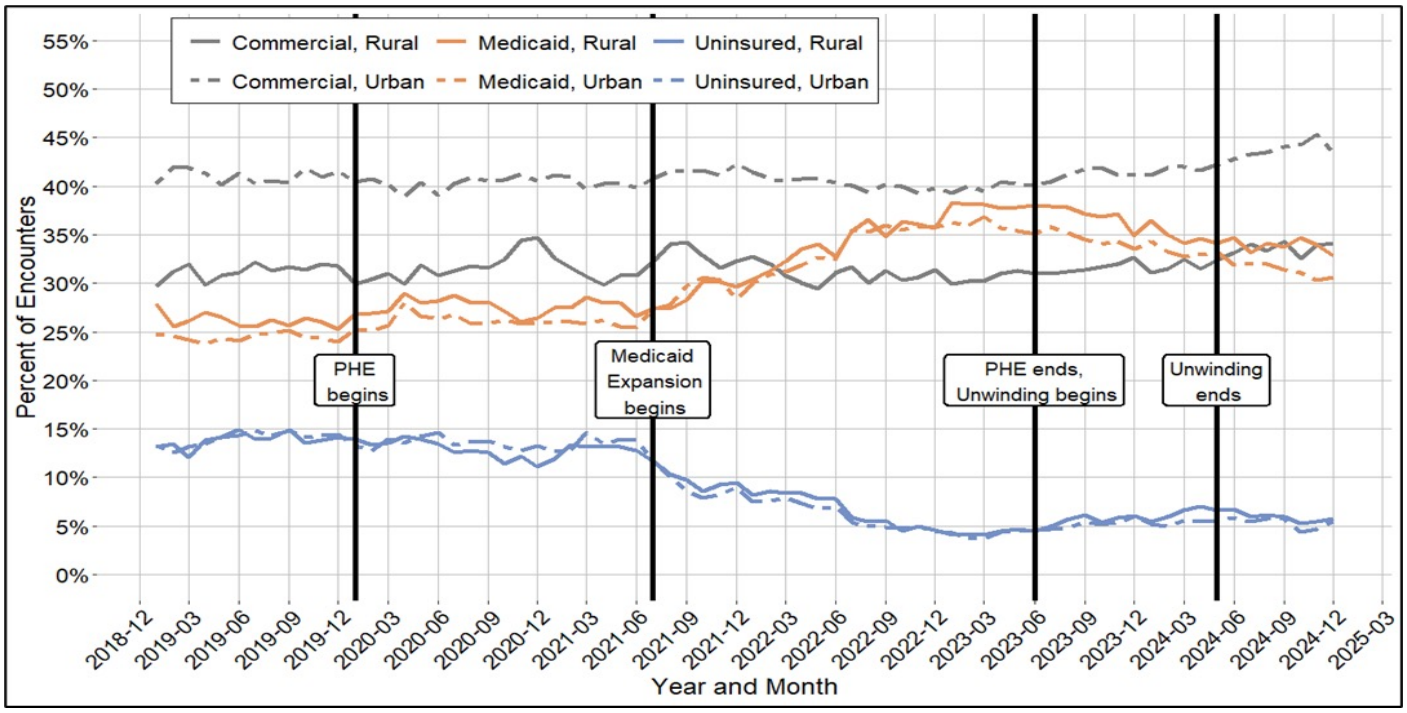


Between the beginning of the PHE unwinding in June 2023 through May 2024, the last month of the unwinding, the Medicaid share of the payer mix for ED outpatient visits, in sharp contrast to its large increase during the previous period as described above, dropped by -4.0 percentage points, averaged across urban and rural areas. The uninsured share, in contrast to the large decrease during the prior period as described above, rose by 1.1 percentage points, averaged across rural and urban areas. Commercial coverage rose by 2.9 percentage points during this period, averaged across rural and urban areas. The Medicaid share remained greater in rural areas compared to urban areas during this period, while the Uninsured share remained similar between urban and rural areas, and the commercial share remained greater in urban compared to rural areas (**Figure 2**).

From the end of the unwinding period in June 2024 up to December 2024, our last data point, the Medicaid share of ED outpatient visits continued to decrease by -1.7 percentage points while uninsured coverage also dropped by -3.0 percentage points, averaged across rural and urban areas. In contrast, the commercial share rose by 3.1 percentage points during this period, averaged across rural and urban areas, likely partially accounting for the reduced uninsured rates during this period. The Medicaid coverage gap between urban and rural areas narrowed while uninsured rates were similar and commercial coverage remained greater in urban areas compared to rural areas during this period (**Figure 2**).

Medicaid and Commercial Coverage and Non-coverage (Uninsured) of IP Hospital Encounters in Rural and Urban Regions. Between January 2019, prior to the PHE, and June, 2021 -- during the PHE but prior to Medicaid expansion -- the share of IP encounters financed by Medicaid did not change much, rising by 0.2 percentage points, while the share of uninsured IP encounters also remained relatively steady, rising by 0.4 percentage points, averaged across rural and urban areas. During this period, commercial coverage of IP encounters rose by 0.8 percentage points, averaged across rural and urban areas. Similar to ED encounters, during this period the Medicaid share was greater in rural areas compared to urban regions and the commercial share was greater in urban compared to rural regions. While the uninsured share was mostly

Figure 3. *Coverage of IP encounters by Medicaid, commercial, and uninsured in rural vs. urban areas, 2019-2024.*



similar during this time period between urban and rural areas, the uninsured share was slightly lower in rural areas compared to urban areas throughout several months post-PHE implementation (**Figure 3**).

The Medicaid expansion appears to have led to a significant shift in the payer mix for IP visits after the expansion was implemented. Between July 2021, when the Medicaid expansion began, and May 2023, just prior to unwinding from the PHE, the Medicaid share of the payer mix rose significantly by 8.7 more percentage points, and the uninsured share dropped by -7.2 percentage points, averaged across rural and urban areas. Commercial coverage did not change appreciably; dropping by -0.7 percentage points during this period, averaged across rural and urban areas. The gap in the Medicaid share between rural and urban regions fluctuated, with a higher share in rural areas compared to urban during most months but also narrowing in some months during this period. The uninsured share was mostly similar in urban and rural areas, with some increase in rural areas compared to urban areas during some months, while the commercial share remained greater in urban compared to rural areas during this period (**Figure 3**).

Between the beginning of the PHE Unwinding in June 2023 through May 2024, the last month of the unwinding, the Medicaid share of the payer mix for IP visits dropped by -2.4 percentage points and the uninsured share rose by 1.2 percentage points, averaged across rural and urban areas, in sharp contrast to the large respective increases and decreases in Medicaid and uninsured rates observed during the previous period as described above, indicating that the unwinding led to a backtracking in coverage. Commercial coverage rose by 2.0 percentage points during this period, averaged across rural and urban areas, perhaps suggesting that some individuals gained commercial coverage. The Medicaid share of encounters was greater in rural areas compared to urban areas throughout this period. The Uninsured share was similar between urban and rural areas, with some increase in rural areas compared to urban areas during some months, while the commercial share remained greater in urban compared to rural areas (**Figure 3**).

From the end of the unwinding period in June 2024 up to December 2024, our last data point, the Medicaid

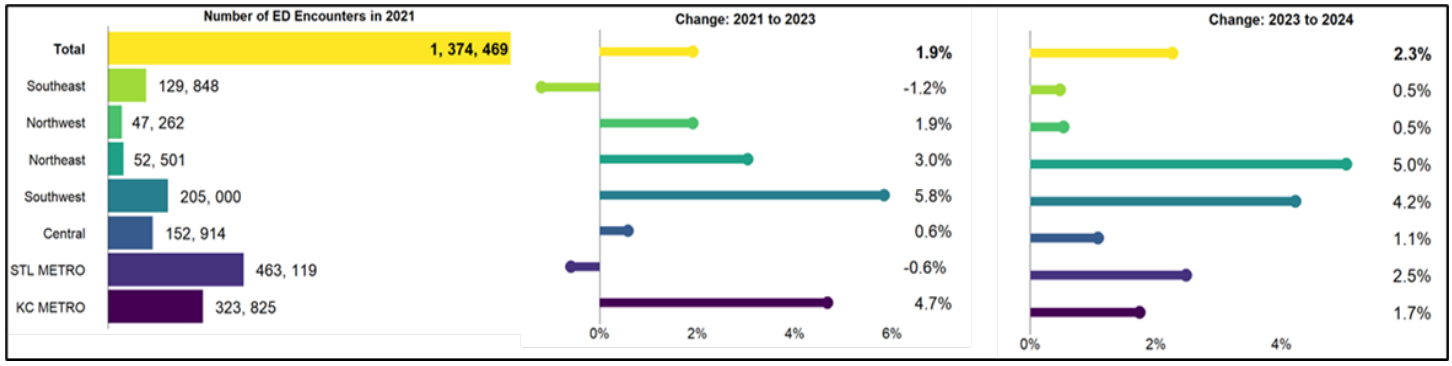
share of IP visits continued to decrease by -1.4 percentage points while the uninsured share also dropped by -0.5 percentage points, averaged across rural and urban areas. In contrast, the commercial share rose by 0.8 percentage points during this period, averaged across rural and urban areas, likely partially accounting for the reducing the uninsured share during this period. The gap in Medicaid share between urban and rural areas remained, with a greater share in rural areas compared to urban, while the uninsured share was similar during this period. The commercial share remained greater in urban areas compared to rural areas during this period (**Figure 3**).

Regional Differences in ED and IP Utilization. How have changes in ED and IP encounters varied across the state? Before exploring how the payer mix changed over time, we will explore the changes in total encounters to explore whether the policy changes led to changes in the number of encounters. To consider this question, the encounters were analyzed by the seven BRFSS regions identified in **Figure 1** above. **Figures 4 - 5** compare changes right after Medicaid expansion (2021-23) and after the unwinding (2023-24).

As expected, the total number of ED encounters was greater in urban relative to rural regions in 2021 (**Figure 4, left panel**). The total number of ED encounters rose by 1.9 percent between 2021 and 2023 and by 2.3 percent statewide between 2023 and 2024. The Southeast and St. Louis regions experienced decreases in ED visits between 2021 and 2023. By contrast, between 2023 and 2024, increases in total number of ED visits were observed in all regions (**Figure 4, middle and right panels**). The overall increase in ED visits between 2021 and 2024 is similar to that of the U.S. and likely reflects the many services now provided on an outpatient basis. In addition, reimbursement rates for providers are often higher for outpatient services performed in the hospital vs. other care settings.[6]

Figure 4. Emergency Department (ED) encounters in Missouri

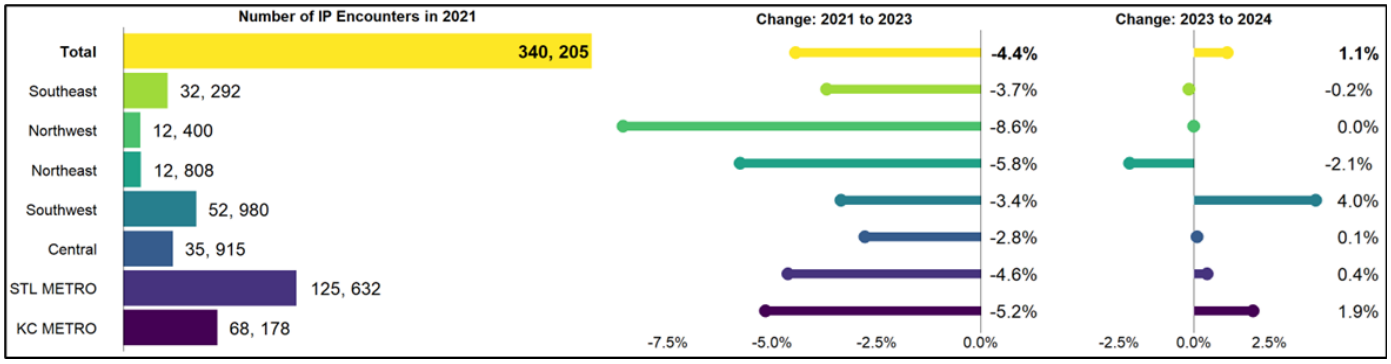
Left, number of IP encounters, 2021. Middle, percent change in IP encounters, 2021-23. Right: percentage change 2023-2024.



As expected, the total number of IP encounters was greater in urban relative to rural regions in 2021 (**Figure 5, left panel**). In contrast to ED encounters, the total number of IP visits decreased by -4.4 percent statewide between 2021 and 2023 (**Figure 5, middle panel**). However, compared to 2023, the total number of IP encounters rose by 1.1 percent statewide in 2024 (**Figure 5, right panel**). Still, when both periods are considered, net decreases in IP visits between 2021 and 2024 were observed for most regions, excluding the Southwest. The statewide decrease in IP visits is likely attributable to the increase in ED visits as described above.[7]

Figure 5. Inpatient encounters in Missouri

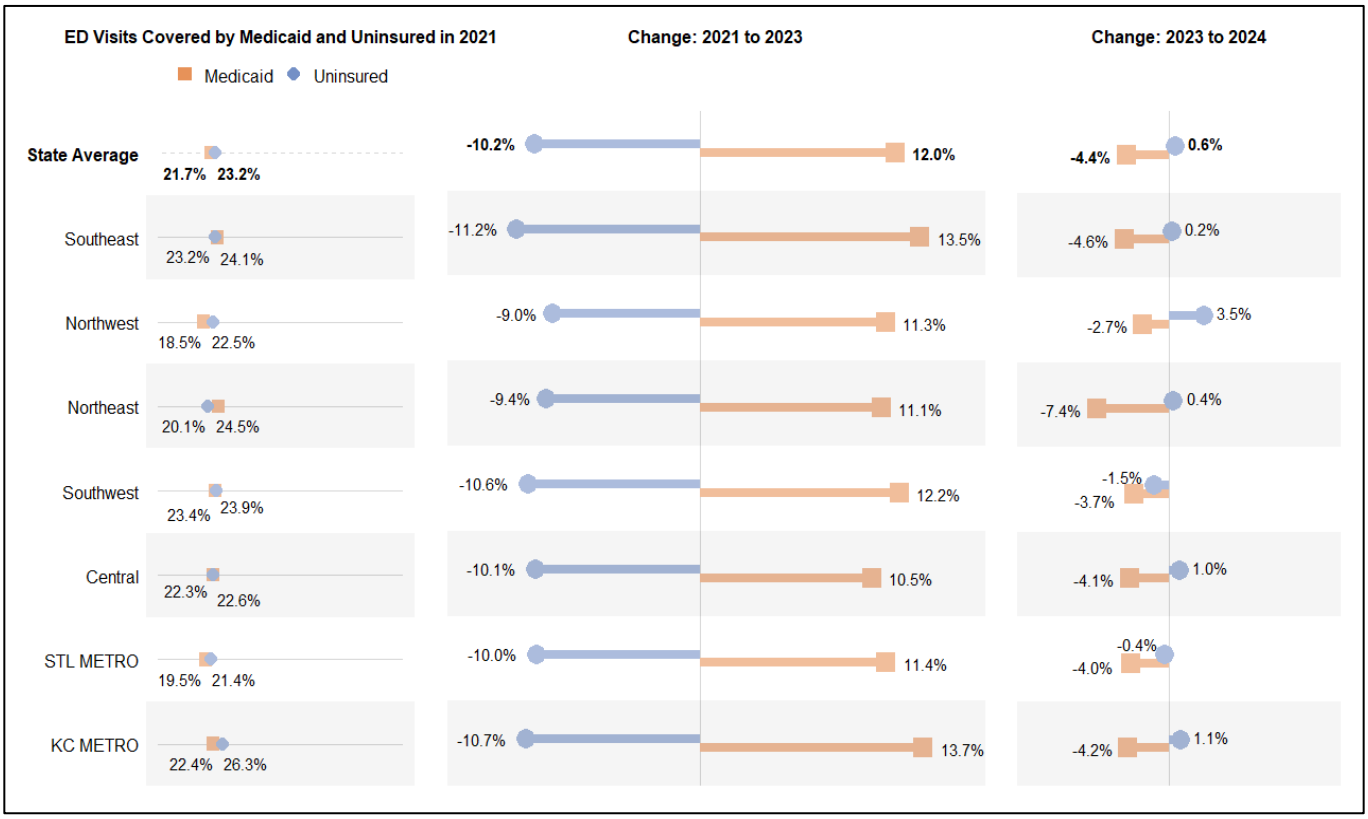
Left, number of IP encounters, 2021. Middle, percent change in IP encounters, 2021-23. Right: percentage change 2023-2024.



Regional Differences in Medicaid Coverage and Uninsured Rates for ED and IP Visits. The Medicaid to uninsured coverage shares of ED encounters was similar across regions (**Figure 6, left panel**). Between 2021 and 2023, Medicaid coverage rose by 12 percent while uninsured rates decreased by -10.2 percent statewide. This pattern was observed across all regions (**Figure 6, middle panel**). In contrast, the Medicaid share dropped by -4.4 percent and the uninsured share rose by 0.8% statewide between 2023 and 2024, during the unwinding period. Decreases in the Medicaid share occurred in all regions between 2023 and 2024. The uninsured share rose slightly in most regions but dropped in St. Louis and Southwest regions between 2023 and 2024 (**Figure 6, right panel**). The large changes in the Medicaid share and the uninsured share between 2021 and 2023 likely reflects the impact of the Medicaid expansion, implemented in mid-2021. Reduced Medicaid shares between 2023 and 2024 are likely due to the impact of the unwinding, implemented in mid-2023, since some enrollees were no longer eligible for Medicaid coverage after the PHE ended.

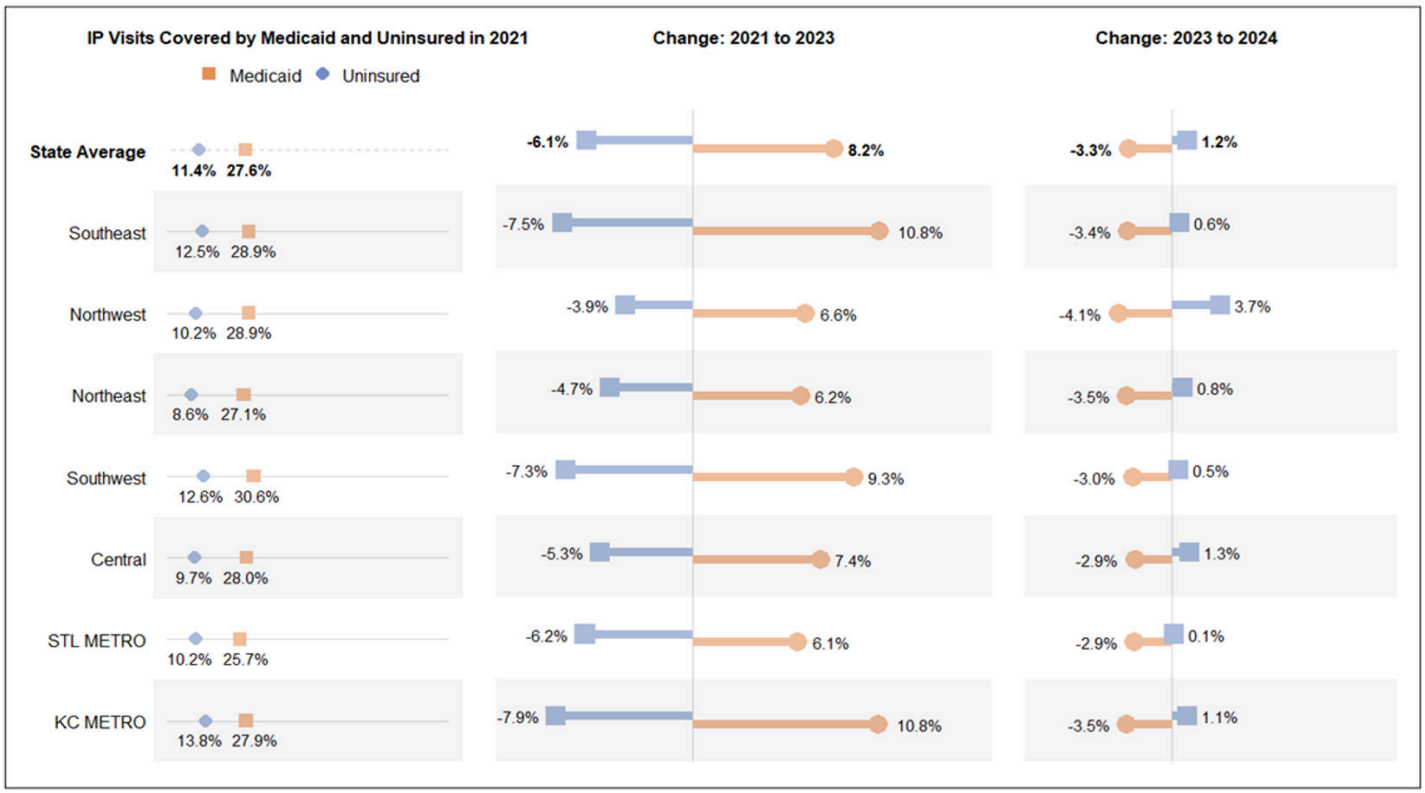
Figure 6. Percent coverage of ED encounters, by region, Medicaid and Uninsured.

Left: ED visits covered by Medicaid, uninsured by region. Middle, percent change, 2021-2023; right: percentage change, 2023-2024



The trends in Medicaid coverage and uninsurance rates for IP visits were similar to those described above for ED visits. The Medicaid to uninsured coverage ratio for IP encounters was similar across regions (**Figure 7, left panel**). Between 2021 and 2023, Medicaid coverage rose by 8.2 percent while uninsured rates decreased by -6.1 percent statewide. This pattern was observed across all regions (**Figure 7, middle panel**). In contrast, the Medicaid share dropped by -3.3 percent and uninsured rates rose by 1.2% statewide between 2023 and 2024, during the Unwinding period. This pattern was observed across all regions (**Figure 7, right panel**). These changes in Medicaid coverage and uninsurance rates for IP visits, similar to those for ED visits, likely reflect changes in policy implementation as described above.

Figure 7. Percent coverage of Inpatient encounters, by region, Medicaid and Uninsured.
Left: ED visits covered by Medicaid, uninsured by region. Middle, percent change, 2021-23; right: percentage change, 2023-2024



IMPLICATIONS

This policy brief explores changes in hospital encounters over time in Missouri, before and after the start of the Medicaid expansion, concentrating on the payer mix for emergency department (ED) encounters and inpatient (IP) encounters.

The analysis shows that the share of encounters covered by Medicaid increased significantly, with uncompensated care dropping significantly, during the PHE and early Medicaid expansion period (2021-23). Some of these trends reversed during the unwinding period, but the overall burden of uncompensated care dropped over time, indicating that out of pocket costs for patients would drop, shifting to Medicaid. Comparing hospitals in rural and urban areas demonstrated that the reductions in uncompensated care was greater in the rural areas of the state, as compared to the urban areas. And the changes in the payer mix varied significantly across the regions of the state, which may reflect differential changes in enrollment.

Multivariate analysis may be needed to disentangle what the shifts in payer mix over time given that Missouri was only one of three states to expand Medicaid during the pandemic.

ENDNOTES

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

2 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 : https://mffh.org/publications/missouri-medicaid-unwinding-post-public-health-emergency-june-2023-january-2024/

6 Source: "Key Facts About Hospitals" by KFF, 2/19/2025; accessed on 5/2/2025; https://www.kff.org/key-facts-about-hospitals/?entry=overview-introduction.

7 Source: "Key Facts About Hospitals" by KFF, 2/19/2025; accessed on 5/2/2025; https://www.kff.org/key-facts-about-hospitals/?entry=overview-introduction.