Findings Brief
NC Rural Health Research Program
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Average Salary Expense in Rural and Urban Hospitals in 2022 Compared with 2018, by Hospital Characteristics

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KEY FINDINGS

The study compares median wages for rural hospitals and urban hospitals from 2017–2018 (pre-COVID) to 2021–2022 (post-COVID) to assess how the pandemic may have affected rural–urban wage disparities.

The median average salary expense per full-time equivalent (FTE):

- Was uniformly higher in urban areas than rural hospitals across all categories of net patient revenue, system affiliation, hospital ownership, and number of acute care beds.
- Was higher for hospitals with higher net patient revenue, system affiliation, or not-for-profit status.

The 2018-22 percentage change in median average salary expense per FTE:

- Was generally higher in rural (vs. urban) hospitals and system-affiliated (vs. independent)
- Was highest among hospitals with 51-100 beds (vs. larger and smaller)
- Was not particularly associated with net patient revenue; the smallest rural hospitals saw the largest increase, and the smallest urban hospitals saw the smallest increase.

While urban hospitals consistently had higher median average salary expenses per FTE across all categories, rural hospitals experienced a greater percentage increase in salary expenses from 2018-2022, which is likely due to greater staffing challenges and pressure to stay competitive in the health care workforce.

BACKGROUND

In the U.S., rural and urban hospitals play critical roles in the health care system, but they operate in vastly different circumstances. Rural hospitals are indispensable for providing care to geographically isolated communities. These facilities, however, often struggle with workforce shortages and financial constraints, which limit their ability to attract and retain skilled health care professionals.[1] Labor costs, a significant portion of hospital expenses, are an important factor in these challenges.[2]

The COVID-19 pandemic exacerbated workforce challenges across the health care sector, introducing unprecedented disruptions. Hospitals faced increasing salary pressures as they coped with staffing shortages, surging patient volumes, and heightened competition for health care workers. These challenges strained hospital finances and raised concerns about long-term viability, particularly for financially distressed rural hospitals. To help offset these pressures, the federal government distributed COVID-19 Provider Relief Funds, which were intended to support hospitals in maintaining operations, retaining staff, and addressing pandemic-related financial hardships.[3]

Although all hospitals faced workforce challenges, rural and urban facilities experienced them in different ways.[4] Urban hospitals, despite larger labor pools and greater financial resources, competed actively for staff in densely populated markets, pushing wages and benefit expectations higher. Rural hospitals, operating with smaller labor markets and limited recruitment options, struggled even more to attract and retain skilled professionals[5,6] and often relied on expensive temporary or contract staff, further increasing labor costs.[6] For rural facilities, rising salary expenses create

difficult budget trade-offs, which may exacerbate workforce shortages and threaten both financial stability and patient access in already underserved communities.

This study asks two questions. First, how did labor costs for rural and urban hospitals compare in 2018? This shows the baseline differences between hospitals, prior to the onset of the pandemic. Second, did the growth in labor cost vary by hospital characteristics (including rural and urban)? This sheds light on factors that influenced salary dynamics and financial resilience. By identifying factors that are associated with salary expenses, this study provides insights into how rural and urban hospitals navigated workforce and financial challenges during a period of unexpected disruption.

METHODS

Financial data and hospital characteristics were obtained from the Centers for Medicare & Medicaid (CMS) Healthcare Cost Report Information System (HCRIS). Hospital salary expenses were sourced from Worksheet A, column 1, line 200, and total employee full-time equivalents (FTE) were sourced from Worksheet S-3, column 10, line 27. Hospital salary cost was measured using average salary expense per FTE, which can be interpreted as the average annual wage in the hospital. It is important to note that these cost reports do not include contract labor and reflect only employed staff expenses and FTEs.

To align salary expenses to the federal fiscal year, a weighted average was applied when hospital cost reports spanned multiple fiscal years. For instance, if a hospital has a cost report covering fiscal years from July 1 to June 30, then we added 9/12 of the values from the 2021-22 cost report (October 2021 to June 2022) and 3/12 of the values from the 2022-23 cost report (July to September 2022). This adjustment ensures that the salary data corresponds to the federal fiscal year (October 1, 2021, to September 30, 2022). To prevent the influence of outliers, average salary expenses per FTE that were below $20,000 or above $100,000 were excluded from the sample. These thresholds were selected based on the typical salary ranges observed in hospital settings.

Hospital characteristics—such as ownership status, system affiliation, and size—were obtained from the HCRIS Hospital Medicare Cost Report, while Medicaid expansion status was gathered from the Kaiser Family Foundation website.[7] Rural hospitals included both Rural Prospective Payment System (PPS) hospitals and Critical Access Hospitals (CAHs). Rural PPS hospitals were defined as rural using the 2022 definition by the Federal Office of Rural Health Policy (FORHP).[8] Table 1 provides the number of CAHs, Rural PPS hospitals, total rural hospitals, and Urban PPS for federal fiscal year 2018 and 2022.

Table 1. Hospital-year Observations by Year and Category

Year label	Start date	End date	CAHs	Rural PPS[a]	Rural Total	Urban PPS[b]	Total
2018	10/1/2017	9/30/2018	1,262	858	2,120	1,954	4,074
2022	10/1/2021	9/30/2022	1,237	773	2,010	1,699	3,709

Median salary expenses per FTE in 2018 and 2022 were calculated based on strata defined by hospital characteristics (size, ownership, system affiliation, Medicaid expansion status) comparing rural and urban hospitals.

[a] Hospitals located in a FORHP defined rural area

[b] Hospitals located in an urban area (i.e., not a FORHP-defined rural area)

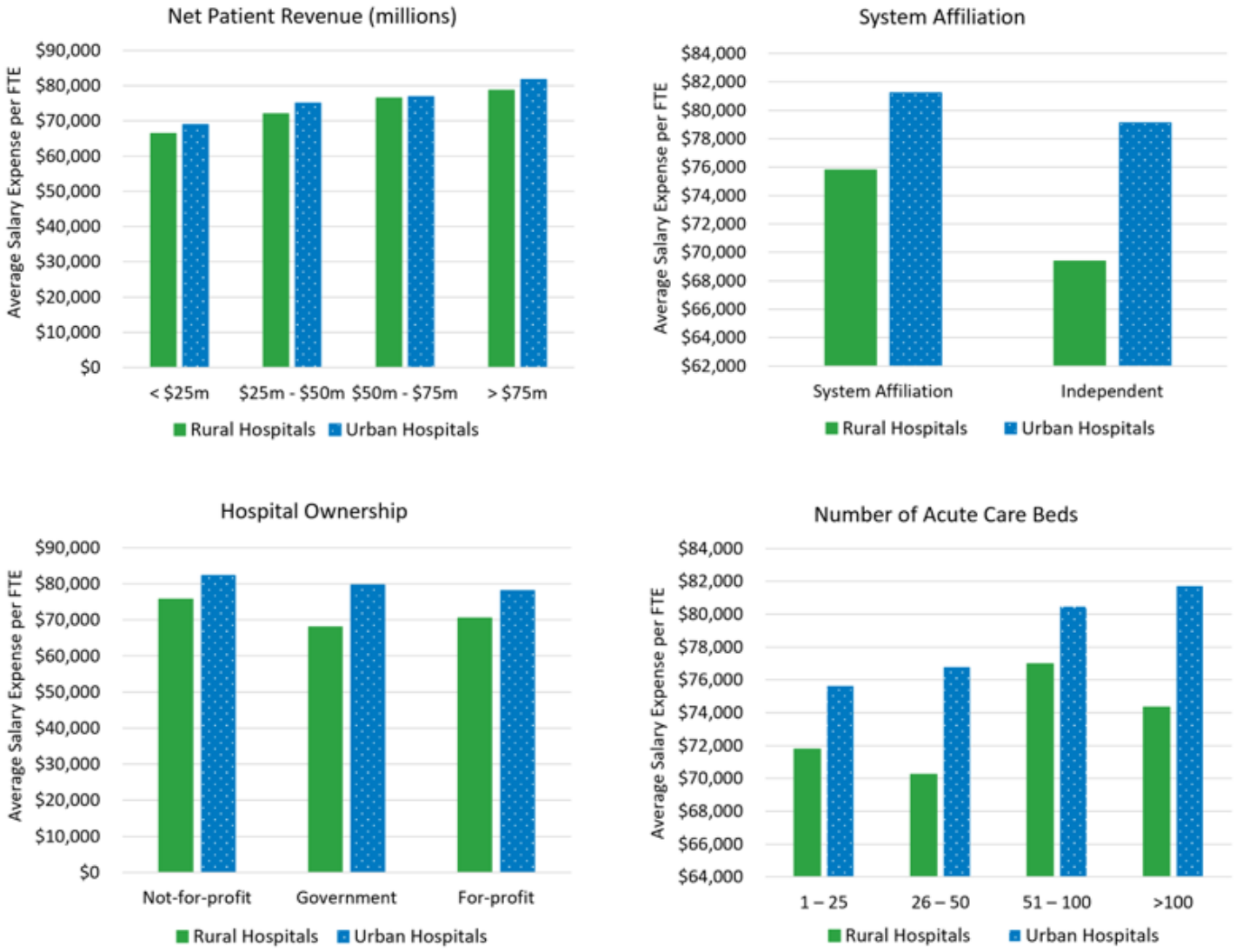
RESULTS

2022 Median Average Salary Expense per FTE for Rural and Urban Hospitals

Figure 1 displays the 2022 median average salary per FTE for rural and urban hospitals by net patient revenue categories, system affiliation, ownership, and number of acute care beds. The 2018 median average salary per FTE data can be found in the appendix. The figure shows that the average salary expense per FTE:

- Was higher for hospitals with higher net patient revenue. The highest median average salary expense per FTE was in urban hospitals with >$75 million in net patient revenue, and the lowest was in rural hospitals with <$25 million in net patient revenue.
- Was higher in system-affiliated hospitals. System-affiliated hospitals are hospitals that are part of a larger network or health system, allowing them to share resources, coordinate services, and benefit from centralized administrative and purchasing power. The highest median average salary expense per FTE was in system-affiliated urban hospitals, and the lowest was in independent rural hospitals.
- Was highest in not-for-profit hospitals. The highest median average salary expense per FTE was in not-for-profit urban hospitals, and the lowest was in government-owned rural hospitals.
- Was higher for urban hospitals with more beds, but the relationship was not uniform among rural hospitals. The median average salary expense per FTE for rural hospitals was highest in hospitals with 51-100 beds and lowest for those with 26-50 beds. The highest median average salary expense per FTE was in urban hospitals with >100 beds and the lowest was in rural hospitals with 26-50 beds.

Figure 1. 2022 Median Average Salary Expense per FTE of Rural and Urban Hospitals



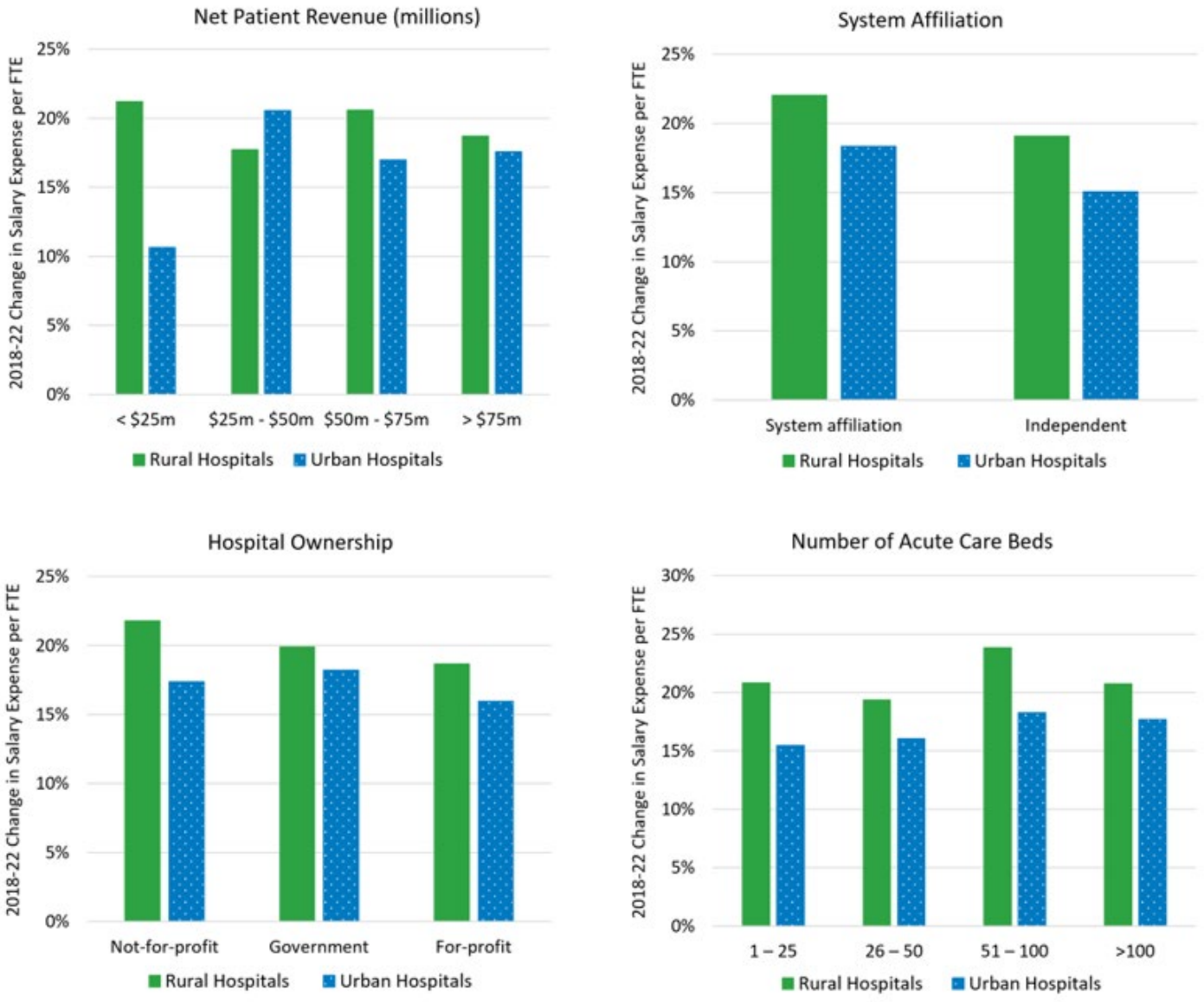
2018 to 2022 Percentage Change in Median Average Salary Expense Per FTE For Rural and Urban Hospitals

While cross-sectional comparisons are informative, examining changes in labor costs from 2018 to 2022 provides additional insight into how rural and urban hospitals may have been affected differently during this period. Although this analysis does not isolate the specific effects of the COVID-19 pandemic, it highlights how labor cost trends evolved before and after its onset.

Figure 2 displays the 2018 to 2022 percentage change in median average salary per FTE for rural and urban hospitals by net patient revenue categories, system affiliation, ownership, and number of acute care beds. The figure shows that the percentage change in median average salary expense per FTE was:

- Highest in rural hospitals with <$25 million in net patient revenue, and lowest in urban hospitals with <$25 million in net patient revenue.
- Highest in system-affiliated rural hospitals, and the lowest is in independent urban hospitals.
- Highest in not-for-profit rural hospitals, and the lowest in for-profit urban hospitals.
- Highest in rural hospitals with 51-100 beds, and the lowest in urban hospitals with 1-25 beds.

Figure 2. 2018 to 2022 Percentage Change in Median Average Salary Expense per FTE



The 2022 median average salary expense per FTE and the 2018 to 2022 percentage change in median average salary expenses per FTE for rural and urban hospitals, stratified by payment classifications, are available in the appendix.

DISCUSSION

The findings highlight differences in how rural and urban hospitals experienced changes in salary expenses before and after the COVID-19 pandemic. While median average expenses per FTE increased for both rural and urban hospitals between 2018 and 2022, rural hospitals experienced larger percentage increases across nearly all categories of hospital characteristics. This trend highlights the unique financial pressures faced by rural hospitals in navigating workforce shortages and salary competition. However, these increases were likely time-limited, supported in part by temporary COVID-19 Provider Relief Funds. As this funding ended, it is possible that salary levels began to decline, mirroring the post-pandemic drop in hospital margins observed after the Provider Relief Funds expired.

One notable observation is that rural hospitals with lower net patient revenues experienced the largest percentage increases in salary expenses, while urban hospitals in the same revenue category saw much smaller increases. This disparity suggests that smaller rural hospitals are disproportionately affected by the pandemic's labor market pressures, potentially due to limited resources and increased reliance on costly temporary staffing solutions. These increases may also reflect the impact of rural-focused Provider Relief Funds, which were allocated in greater proportion to low revenue rural hospitals and likely supported their ability to offer higher salaries during this period.

Hospital system affiliation also played a role in shaping salary expense trends. System-affiliated hospitals – both rural and urban – reported higher increases in salary expenses compared to independent facilities. For rural hospitals, being part of a system may provide some financial and operational support but may also reflect heightened efforts to remain competitive in attracting and retaining staff.

Ownership status revealed further disparities. Not-for-profit rural hospitals experienced the largest percentage increases in salary expenses compared to their urban counterparts. Government-owned rural hospitals, while reporting slightly smaller increases, still faced significant financial strain as they worked to meet staffing demands in resource-limited environments.

Bed size was another key determinant of salary expense changes. Rural hospitals with 51 – 100 beds showed the highest percentage increases in salary expenses, a trend mirrored in urban hospitals. This finding suggests that mid-sized hospitals may have faced unique challenges during the pandemic, such as balancing resource allocation with rising workforce costs.

Overall, the analysis reveals that rural hospitals experienced greater increases in salary expenses relative to urban hospitals between 2018 and 2022. This time period was influenced by multiple factors, including pandemic related workforce challenges, targeted relief funding, and policy changes such as the low wage index adjustment and Medicaid continuous coverage. The smaller labor markets, limited resources, and reliance on temporary staffing solutions likely contributed to the sharper increases in salary expenses.[6,9] These challenges not only strain rural hospital finances but also threaten their ability to maintain workforce stability and provide accessible, high-quality care to their communities.

Addressing these disparities requires targeted strategies that account for the distinct needs of rural hospitals. Enhanced funding mechanisms, workforce development programs tailored to rural areas, and policies that incentivize health care professionals to work in rural settings may prove effective at reducing the acute cost pressures on rural hospitals. Such measures are essential to ensuring the long-term viability of rural hospitals.

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APPENDIX

Median Salary Expense per FTE [a] of Rural and Urban Hospitals by Hospital Characteristics

Hospital Characteristics	Rural Hospitals[b] 2018	Rural Hospitals[b] 2022	Rural Hospitals[b] % Change	Urban Hospitals[c] 2018	Urban Hospitals[c] 2022	Urban Hospitals[c] % Change
Net Patient Revenue						
< $25m	$54,755	$66,362	21.2%	$62,286	$68,912	10.6%
$25m - $49.9m	$61,137	$71,970	17.7%	$62,264	$75,048	20.5%
$50m - $75m	$63,465	$76,527	20.6%	$65,722	$76,878	17.0%
> $75m	$66,325	$78,726	18.7%	$69,472	$81,662	17.6%
System Affiliation						
Yes	$62,115	$75,806	22.0%	$68,634	$81,225	18.3%
No	$58,250	$69,366	19.2%	$68,768	$79,121	15.1%
Ownership Status						
Not-for-profit	$62,223	$75,761	21.8%	$70,043	$82,200	17.4%
Government	$56,735	$68,026	19.9%	$67,434	$79,699	18.2%
For-profit	$59,418	$70,513	18.7%	$67,385	$78,143	16.0%

[a] Average salary expense per FTE <$20,000 and >$100,000 were excluded from the analysis.
[b] Hospitals located in a FORHP defined rural area (including all CAHs)
[c] Hospitals located in an urban area (i.e., not a FORHP-defined rural area)

Hospital Characteristics	Rural Hospitals[b] 2018	Rural Hospitals[b] 2022	Rural Hospitals[b] % Change	Urban Hospitals[c] 2018	Urban Hospitals[c] 2022	Urban Hospitals[c] % Change
Number of Acute Care Beds						
1 - 25	$59,421	$71,778	20.8%	$65,506	$75,633	15.5%
26 - 50	$58,867	$70,250	19.3%	$66,164	$76,764	16.0%
51 - 100	$62,155	$76,973	23.8%	$68,031	$80,460	18.3%
> 100	$61,574	$74,342	20.7%	$69,418	$81,698	17.7%
Payment Classifications						
Critical Access Hospital	$59,669	$71,818	20.4%	—	—	—
Medicare Dependent Hospital	$56,846	$70,060	23.3%	$61,071	$74,542	22.1%
Prospective Payment System Hospital	$60,085	$73,067	21.6%	$68,914	$81,040	17.6%
Sole Community Hospital	$61,812	$71,973	16.4%	$72,151	$81,628	13.1%
Rural Referral Center	$60,570	$75,039	23.9%	$66,211	$80,758	22.0%
Sole Community Hospital / Rural Referral Center	$62,504	$76,492	22.4%	$71,888	$84,517	17.6%
Medicare Dependent Hospital / Rural Referral Center	$60,646	$74,915	23.5%	$66,525	$76,738	15.4%
Essential Access Community Hospital & Essential Access Community Hospital / Rural Referral Center	$75,506	$84,291	11.6%	$73,839	$84,291	14.2%

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