



APRIL 2026

Trends in Inpatient Revenue and Volume Among Critical Access Hospitals

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KEY FINDINGS

- From 2017 – 2024, outpatient services accounted for an increasing share of total patient revenue at the average Critical Access Hospital (CAH) in the study sample, rising from 76.0 to 82.3 percent. This change was primarily attributed to increases in outpatient daily revenue.
- Similar trends in outpatient-to-total patient revenue were observed when examining CAHs with variation in rurality, Census region, ownership, or system affiliation, with some small differences across groups.
- Adjusted for inflation, the average sampled CAH experienced a 4.7 percent decrease in inpatient daily revenue across the study period (\$37,888 to \$36,102) and experienced a 50.0 percent increase in outpatient daily revenue (\$132,454 to \$198,719).
- From 2017 – 2024, inpatient average daily census (ADC) among the average sampled CAH decreased by 5.3 percent from 7.6 to 7.2. Similar trends were observed when stratifying CAHs by rurality, Census region, ownership, or system affiliation, with some small differences across groups.

BACKGROUND

Previous studies have shown that rural hospital inpatient volume has declined¹ and that the percentage of hospitals' revenue derived from outpatient services versus inpatient services has increased over time.² Between 2011 – 2017, rural hospitals experienced an average decline of 13 percent in inpatient average daily census (ADC, i.e., inpatient days per day of hospital operation).¹ For the average Critical Access Hospital (CAH), the percentage of revenue from outpatient services grew from 70.5 percent to 77.3 percent from 2011 – 2019.² The increase in the percentage of outpatient revenue resulted from higher growth in total outpatient revenue as compared to inpatient revenue.

Rural hospital finances and patterns of care were also heavily disrupted by the COVID-19 pandemic. Research by McFadyen and colleagues has shown that CAHs experienced a number of (possibly temporary) changes during the pandemic, including improved profitability, increased outpatient revenue relative to total patient revenue, decreased inpatient care (ADC), decreased uncompensated care, and increased salary per full-time equivalent.³ Follow-up analysis provided additional evidence that public health emergency (PHE) funding led to significant improvements in operating margin among rural hospitals, with CAHs experiencing the largest changes.⁴ However, findings also indicate that rural hospital margins would have been below prepandemic levels in the absence of PHE funding. Revenue and volume trends may be changing in important ways now that the PHE funding is no longer available. Understanding these changes is relevant



because CAHs may be more vulnerable than (non-CAH) urban hospitals to inpatient revenue and volume shifts, thus impacting their long-term sustainability. Several additional hypothesized factors may have contributed to changing revenue and volume in recent years, such as fewer elective surgeries during and after the COVID 19 pandemic, more patients receiving care in outpatient clinics instead of being admitted, and some COVID 19 cases being treated in emergency or observation settings rather than inpatient beds. Further research can provide insight into some of these hypotheses while also helping CAHs understand their service mix relative to peers in a post-pandemic landscape.

STUDY OBJECTIVE

The objective of the current study was to examine recent trends in CAH revenue and volume.

KEY METHODS

The study sample included CAHs with annual facility information available through the Centers for Medicare & Medicaid Services (CMS) Healthcare Cost Report Information System (HCRIS).⁵ We examined facility cost reports with an end date occurring between years 2017 – 2024. Among sampled CAHs, we included hospitals with available patient revenue and volume data for each year of our study period. We accounted for annual inflation by adjusting inpatient and outpatient per-day revenue to 2024 dollars.⁶

We first calculated revenue and volume trends among all CAHs meeting study inclusion criteria. Next, we separated the study sample based on additional characteristics of the CAHs, including rurality (as identified by the Federal Office of Rural Health Policy in the Health Resources & Services Administration for fiscal year 2025),⁷ Census region, ownership (for-profit versus government-owned versus nonprofit), and system affiliation.

RESULTS

The sample included 9,160 annual observations of 1,145 unique CAHs that met study inclusion criteria (Table 1). Across all hospital-years with available data, the average CAH had \$36,904 daily inpatient revenue, \$158,182 daily outpatient revenue, 78.8 percent outpatient-to-total patient revenue, and an ADC equal to 7.4. Furthermore, the majority of sampled CAHs were in FORHP-designated rural areas (96.6 percent), nonprofit (56.1 percent), and unaffiliated (60.8 percent); a plurality of sampled CAHs were in the Midwest Census region (49.1 percent).

TABLE 1. Characteristics of Study Sample

| | |
|---|---------------------|
| Number of Hospitals | 1,145 |
| Number of Annual Observations | 9,160 |
| Mean (Standard Deviation) | |
| Inpatient Revenue Per Day ^a | \$36,904 (38,656) |
| Outpatient Revenue Per Day ^a | \$158,182 (153,203) |
| Outpatient-to-Total Patient Revenue | 78.8% (12.4) |
| Inpatient Average Daily Census | 7.4 (4.6) |
| Acute Beds | 21.5 (5.2) |
| Percent of Sample | |
| Rurality | |
| Rural | 96.6% |
| Urban | 3.4% |
| Census Region | |
| Midwest | 49.1% |
| Northeast | 5.2% |
| South | 23.7% |
| West | 22.1% |
| Ownership | |
| For-Profit | 3.0% |
| Government-Owned | 40.9% |
| Nonprofit | 56.1% |
| System Affiliation | |
| Affiliated | 39.2% |
| Unaffiliated | 60.8% |

^a In 2024 dollars



From 2017 – 2024, outpatient-to-total patient revenue for the average sampled CAH grew from 76.0 percent to 82.3 percent (Table 2). Similar trends in outpatient-to-total patient revenue were observed when stratifying CAHs by rurality, Census region, ownership, or system affiliation, with some small differences across groups (see Table 2 below

for the specific trends by hospital group). Adjusted for inflation, the average sampled CAH experienced a 4.7 percent decrease in inpatient daily revenue from 2017 – 2024 (\$37,888 to \$36,102; Appendix Table A1) and experienced a 50.0 percent increase in outpatient daily revenue (\$132,454 to \$198,719; Appendix Table A2).

TABLE 2. Average Outpatient-to-Total Patient Revenue Among Critical Access Hospitals, 2017 – 2024

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| All Sampled CAHs (n = 1,139)^a | 76.0% | 76.8% | 77.5% | 77.8% | 78.4% | 79.8% | 81.5% | 82.3% |
| By Hospital Characteristic^b | | | | | | | | |
| <i>Rural</i> | 76.1% | 76.9% | 77.6% | 77.9% | 78.4% | 79.8% | 81.5% | 82.3% |
| <i>Urban</i> | 73.3% | 74.3% | 75.5% | 76.0% | 76.4% | 78.8% | 80.9% | 81.0% |
| <i>Midwest</i> | 77.5% | 78.3% | 79.3% | 79.7% | 80.5% | 81.8% | 83.6% | 87.4% |
| <i>Northeast</i> | 76.1% | 75.9% | 78.3% | 78.7% | 80.9% | 81.4% | 83.7% | 84.1% |
| <i>South</i> | 77.3% | 77.8% | 78.0% | 77.3% | 76.7% | 78.5% | 79.7% | 80.0% |
| <i>West</i> | 71.5% | 72.6% | 72.9% | 73.9% | 74.7% | 76.4% | 78.1% | 79.0% |
| <i>For-Profit</i> | 78.0% | 77.8% | 77.3% | 76.0% | 76.8% | 79.0% | 80.1% | 80.5% |
| <i>Government-Owned</i> | 75.8% | 76.4% | 76.9% | 77.3% | 77.8% | 79.4% | 80.9% | 82.1% |
| <i>Nonprofit</i> | 76.7% | 77.6% | 78.5% | 78.9% | 79.6% | 80.8% | 82.6% | 83.2% |
| <i>Affiliated</i> | 77.7% | 78.5% | 79.3% | 79.6% | 79.8% | 81.2% | 82.6% | 83.1% |
| <i>Unaffiliated</i> | 74.3% | 75.0% | 75.8% | 76.1% | 77.0% | 78.5% | 80.2% | 81.2% |

^a The number of unique CAHs reported in this table is slightly less than the number reported in Table 1. This is because Table 1 includes all CAHs with available revenue or volume data (or both) across the full study period.

^b Stratified analyses focus on CAHs with consistent rural/urban status, Census region, ownership, or system affiliation across the study period. Thus, the subset of CAHs examined in each stratified analysis is smaller than the full CAH sample.



TABLE 3. Mean ADC Among Critical Access Hospitals, 2017 – 2024

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|------|------|------|------|------|------|------|------|
| All Sampled CAHs (n = 1,065)^a | 7.6 | 7.6 | 7.5 | 7.1 | 7.6 | 7.5 | 7.1 | 7.2 |
| By Hospital Characteristic^b | | | | | | | | |
| <i>Rural</i> | 7.5 | 7.5 | 7.4 | 7.0 | 7.5 | 7.4 | 7.1 | 7.1 |
| <i>Urban</i> | 10.0 | 10.1 | 9.8 | 9.7 | 10.4 | 10.3 | 9.7 | 9.8 |
| | | | | | | | | |
| <i>Midwest</i> | 6.7 | 6.6 | 6.4 | 6.1 | 6.4 | 6.4 | 6.0 | 6.1 |
| <i>Northeast</i> | 11.2 | 11.1 | 10.7 | 9.7 | 10.4 | 11.4 | 10.9 | 10.4 |
| <i>South</i> | 7.9 | 8.0 | 8.0 | 7.7 | 8.2 | 7.9 | 7.6 | 7.8 |
| <i>West</i> | 8.6 | 8.7 | 8.7 | 8.2 | 8.8 | 8.7 | 8.3 | 8.2 |
| | | | | | | | | |
| <i>For-Profit</i> | 7.2 | 7.3 | 7.5 | 7.7 | 7.9 | 7.5 | 7.0 | 7.4 |
| <i>Government-Owned</i> | 6.8 | 6.9 | 6.8 | 6.4 | 6.7 | 6.4 | 6.1 | 6.2 |
| <i>Nonprofit</i> | 8.1 | 8.0 | 7.9 | 7.4 | 8.0 | 8.1 | 7.7 | 7.7 |
| | | | | | | | | |
| <i>Affiliated</i> | 8.0 | 8.0 | 7.9 | 7.6 | 8.4 | 8.3 | 7.9 | 8.0 |
| <i>Unaffiliated</i> | 7.5 | 7.5 | 7.4 | 6.9 | 7.1 | 7.0 | 6.7 | 6.7 |

Abbreviations: ADC = Average Daily Census.

^aThe number of unique CAHs reported in this table is slightly less than the number reported in Table 1. This is because Table 1 includes all CAHs with available revenue or volume data (or both) across the full study period.

^bStratified analyses focus on CAHs with consistent rural/urban status, Census region, ownership, or system affiliation across the study period. Thus, the subset of CAHs examined in each stratified analysis is smaller than the full CAH sample.

From 2017 – 2024, inpatient ADC among the average sampled CAH decreased by 5.3 percent from 7.6 to 7.2 (Table 3). Again, similar trends were observed when stratifying CAHs by rurality, Census region, ownership, or system affiliation, with some small differences across groups (see Table 3 below for the specific trends by hospital group).

DISCUSSION

The purpose of the current study was to examine recent trends in CAH revenue and volume. Our findings show that inpatient revenue and volume have declined at the average sampled CAH since 2017, with outpatient revenue growing substantially. These results are a continuation of previously observed trends, as Malone, Pink, and Holmes found inpatient volume at the average sampled CAH decreased by nearly 10 percent from 2011 – 2017,¹ and John,

Malone, and Pink found outpatient to total patient revenue at the average sampled CAH increased by 6.7 percentage points from 2011 – 2019.² Previous work from McFadyen and colleagues additionally demonstrated that CAHs generally experienced decreased inpatient volume and increased outpatient revenue (relative to total patient revenue) during the COVID-19 pandemic.³ Similarly, we observed that sampled CAHs experienced a decrease in mean inpatient ADC from 7.5 in 2019 to 7.1 in 2020 before rebounding to 7.6 in 2021. We further observed that average inpatient daily revenue among sampled CAHs fell from \$37,597 in 2019 to \$35,349 in 2020. Average outpatient daily revenue also fell (\$145,554 in 2019 to \$139,010 in 2020) but experienced a smaller decrease on a percentage basis, which helps explain why average outpatient-to-total patient revenue among sampled CAHs increased slightly from 77.5 percent in 2019 to 77.8 percent in 2020.



Overall, the findings from the current research and previous studies suggest that CAHs are continuing to shift more focus toward outpatient care. Hospitals that experienced the largest increases in outpatient-to-total patient revenue included urban CAHs, CAHs in the Northeast, nonprofit CAHs, and unaffiliated CAHs. In comparison, hospitals that experienced the largest decreases in inpatient ADC included rural CAHs, CAHs in the Midwest or Northeast, government-owned CAHs, and unaffiliated CAHs. Many CAHs had similar inpatient ADC and/or inpatient daily revenue in 2017 and 2024, demonstrating that changes in outpatient-to-total patient revenue were driven mostly by growth in outpatient care rather than a steep decline in inpatient care. One interpretation of these findings is that growth in outpatient revenue allowed many CAHs to maintain a core set of inpatient services that provided (mostly) consistent inpatient volume over the study period. At the same time, growth in outpatient revenue could reflect CAH operational strategies that focus on more profitable, less resource- and staffing-intensive service offerings. As CAHs continue to shift toward outpatient-centric facilities, State Flex Programs can consider monitoring possible effects on hospital financial sustainability and service availability for patients, especially if hospitals explore eliminating inpatient services and transitioning to Rural Emergency Hospitals (REHs). This may include tracking changes to service lines (e.g., reductions in inpatient beds or obstetrics services), shifts from inpatient procedures to outpatient clinic-based care, or signs that outpatient departments are becoming strained by increased demand. Additionally, State Flex Programs can use the Critical Access Hospital Measurement and Performance Assessment System to understand the service mix and ADC of individual CAHs as they develop their workplans. This may involve conducting a basic service-line assessment, reviewing revenue-cycle

trends to identify where losses may be occurring, or helping hospitals evaluate whether an REH transition aligns with their community's needs. As a further example, CAHs may need assistance understanding the cost report and reimbursement implications of a transition from inpatient to outpatient services, or in determining how to optimally allocate financial and personnel resources to effectively support growth in outpatient care.

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This report was completed by the Flex Monitoring Team with funding from the Federal Office of Rural Health Policy (FORHP), Health Resources and Services Administration (HRSA), U.S. Department of Health and Human Services (HHS), under PHS Grant No. U27RH01080. The information, conclusions and opinions expressed in this document are those of the authors and no endorsement by FORHP, HRSA, or HHS is intended or should be inferred.



FULL METHODS

The study sample included CAHs with annual facility information available through the Centers for Medicare & Medicaid Services (CMS) Healthcare Cost Report Information System (HCRIS).⁵ We examined facility cost reports covering a period of 360 – 370 days with an end date occurring between years 2017 – 2024. Furthermore, we focused on CAHs that were unaffiliated with the Indian Health Service (IHS), as IHS facilities may have different inpatient trends. Among non-IHS CAHs, we included hospitals with available patient revenue and volume data for each year of our study period. Inpatient and outpatient revenue were sourced from cost report Worksheet G-2, Part I, Line 28, Columns 1 and 2, respectively. Inpatient volume

(i.e., inpatient patient days) was sourced from cost report Worksheet S-3, Part I, Line 14, Column 8. Each cost report’s annual revenue and volume were divided by the days in the reporting period to generate per-day revenue and volume measures. We also adjusted inpatient and outpatient per-day revenue to 2024 dollars using the Bureau of Labor Statistics Consumer Price Index for medical care.⁶

Prior to analysis, we checked cost report data for potential spurious data points and extreme outliers. For example, we checked for annual revenue totals equal to \$0 or greater than \$1,000,000,000, as well as ADC totals less than one or greater than the reported number of acute inpatient beds (CAHs have a maximum bed total equal to 25). After excluding CAHs with potential cost report

APPENDIX TABLE A1. Average Inpatient Daily Revenue Among Critical Access Hospitals, 2017 – 2024

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|----------|----------|----------|----------|----------|----------|----------|----------|
| All Sampled CAHs (n = 1,139)^a | \$37,888 | \$37,939 | \$37,597 | \$35,349 | \$38,021 | \$36,968 | \$35,365 | \$36,102 |
| By Hospital Characteristic^b | | | | | | | | |
| <i>Rural</i> | \$37,030 | \$37,084 | \$36,767 | \$34,541 | \$37,113 | \$36,075 | \$34,443 | \$35,120 |
| <i>Urban</i> | \$63,447 | \$63,392 | \$62,329 | \$59,403 | \$65,087 | \$63,567 | \$62,804 | \$65,374 |
| <i>Midwest</i> | \$33,368 | \$33,002 | \$32,460 | \$30,444 | \$32,705 | \$31,867 | \$29,481 | \$29,751 |
| <i>Northeast</i> | \$61,291 | \$65,008 | \$58,441 | \$51,882 | \$52,456 | \$53,893 | \$50,440 | \$51,490 |
| <i>South</i> | \$31,112 | \$30,662 | \$30,395 | \$29,857 | \$32,938 | \$31,699 | \$31,385 | \$32,399 |
| <i>West</i> | \$49,669 | \$50,321 | \$51,800 | \$48,219 | \$51,862 | \$49,945 | \$49,134 | \$50,541 |
| <i>For-Profit</i> | \$43,478 | \$42,228 | \$44,398 | \$42,756 | \$45,281 | \$40,410 | \$39,954 | \$41,345 |
| <i>Government-Owned</i> | \$27,848 | \$28,135 | \$27,787 | \$26,133 | \$28,444 | \$27,612 | \$26,827 | \$26,553 |
| <i>Nonprofit</i> | \$44,685 | \$44,575 | \$44,001 | \$41,299 | \$44,202 | \$43,284 | \$40,856 | \$42,258 |
| <i>Affiliated</i> | \$45,007 | \$44,863 | \$44,679 | \$42,047 | \$46,169 | \$44,791 | \$43,205 | \$45,145 |
| <i>Unaffiliated</i> | \$34,504 | \$34,917 | \$34,426 | \$32,293 | \$34,097 | \$33,171 | \$31,643 | \$31,794 |

Notes: Outpatient revenue adjusted to 2024 dollars.

^a The number of unique CAHs reported in this table is slightly less than the number reported in Table 1. This is because Table 1 includes all CAHs with available revenue or volume data (or both) across the full study period.

^b Stratified analyses focus on CAHs with consistent rural/urban status, Census region, ownership, or system affiliation across the study period. Thus, the subset of CAHs examined in each stratified analysis is smaller than the full CAH sample.



errors or extreme outliers, we proceeded with a descriptive analysis of patient revenue and volume trends by year. We first calculated revenue and volume trends among all CAHs meeting study inclusion criteria. Next, we stratified our analysis by additional characteristics of the CAHs, including rurality (as identified by the Federal Office of Rural Health Policy in the Health Resources & Services Administration for fiscal year 2025),⁷ Census region, ownership (for-profit versus government-owned versus nonprofit, as identified by cost report Worksheet S-2, Part I, Line 21), and system affiliation (as identified by cost report Worksheet S-2, Part I, Lines 141 – 143).

APPENDIX TABLE A2. Average Outpatient Daily Revenue Among Critical Access Hospitals, 2017 – 2024

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| All Sampled CAHs (n = 1,139)^a | \$132,454 | \$138,340 | \$145,554 | \$139,010 | \$157,407 | \$169,493 | \$184,477 | \$198,719 |
| By Hospital Characteristic^b | | | | | | | | |
| <i>Rural</i> | \$130,370 | \$135,883 | \$143,031 | \$136,528 | \$154,582 | \$166,279 | \$180,856 | \$195,011 |
| <i>Urban</i> | \$194,526 | \$211,516 | \$220,679 | \$212,948 | \$241,572 | \$265,220 | \$292,315 | \$309,160 |
| <i>Midwest</i> | \$130,298 | \$135,964 | \$143,128 | \$137,525 | \$155,478 | \$167,064 | \$181,167 | \$196,283 |
| <i>Northeast</i> | \$206,166 | \$209,868 | \$222,249 | \$210,440 | \$240,327 | \$260,039 | \$282,547 | \$303,381 |
| <i>South</i> | \$112,569 | \$115,809 | \$119,098 | \$110,840 | \$124,659 | \$135,208 | \$146,030 | \$153,534 |
| <i>West</i> | \$141,206 | \$150,915 | \$161,218 | \$155,652 | \$177,231 | \$190,281 | \$209,899 | \$227,851 |
| <i>For-Profit</i> | \$157,061 | \$163,901 | \$164,226 | \$146,655 | \$165,747 | \$176,369 | \$191,886 | \$206,269 |
| <i>Government-Owned</i> | \$95,736 | \$99,809 | \$104,944 | \$100,963 | \$113,481 | \$122,782 | \$133,175 | \$142,507 |
| <i>Nonprofit</i> | \$159,222 | \$166,579 | \$175,754 | \$167,884 | \$190,830 | \$204,971 | \$223,137 | \$240,961 |
| <i>Affiliated</i> | \$164,678 | \$172,459 | \$182,043 | \$172,858 | \$195,112 | \$209,359 | \$225,656 | \$242,502 |
| <i>Unaffiliated</i> | \$113,875 | \$119,163 | \$125,242 | \$119,995 | \$136,473 | \$146,838 | \$160,989 | \$173,551 |

Notes: Outpatient revenue adjusted to 2024 dollars.

^a The number of unique CAHs reported in this table is slightly less than the number reported in Table 1. This is because Table 1 includes all CAHs with available revenue or volume data (or both) across the full study period.

^b Stratified analyses focus on CAHs with consistent rural/urban status, Census region, ownership, or system affiliation across the study period. Thus, the subset of CAHs examined in each stratified analysis is smaller than the full CAH sample.