Findings Brief
NC Rural Health Research Program

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A Comparison of 2017-19 Uncompensated Care of Rural and Urban Hospitals by Net Patient Revenue, System Affiliation, and Ownership

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BACKGROUND

Rural residents are less likely than urban residents to have health insurance through their employer, and are more likely to be uninsured or underinsured and therefore unable to cover out-of-pocket costs on their own.[1] For hospitals that serve rural residents, this often means higher rates of uncompensated care compared to urban hospitals.[2,3] Uncompensated care refers to services provided that are never reimbursed, including charity care and unanticipated bad debt.[4] High uncompensated care burden is a concern because it may contribute to smaller operating margins and rural hospital closures.[2] In a September 2022 report on rural hospital closures, the American Hospital Association estimated that rural hospitals provided an estimated $4.6 billion in uncompensated care in 2020.[5]

Government payments that assist with uncompensated care burden for hospitals include Medicaid Uncompensated Care 1115 demonstration waivers, Medicare and Medicaid Disproportionate Share Hospital (DSH) payments, Medicare Bad Debt Payments, and Medicare Uncompensated Care Payments.[6] Over the past year, there has been heightened concern because reductions totaling $32 billion were scheduled for Medicaid DSH payments beginning in 2024.[7,8] Both Medicaid and Medicare DSH payment reductions were included as part of the Patient Protection and Affordable Care Act in anticipation of Medicaid Expansion increasing insurance coverage and decreasing uncompensated care.[5,10,11] Although Medicaid DSH payment cuts were averted in the November 2023 continuing resolution, uncertainty about longer-term funding for Medicare DSH payments remains.[12] With 10 states still unexpanded,[13] DSH payments may still be important for small rural hospitals that are financially vulnerable.[7]

The purpose of this study is to better understand patterns of uncompensated care, and it extends our 2018 study of geographic variation in uncompensated care between rural and urban hospitals.[2] Specifically, we investigate the association of uncompensated care with three factors previously found to be predictive of uncompensated care:

- *Net patient revenue*: Between 2015 and 2016, uncompensated care increased for hospitals with less than $20 million in net patient revenue and decreased for hospitals with more than $20 million in net patient revenue.[1]

KEY FINDINGS

This study compares 2017-19 reported uncompensated care as a percentage of operating expense ("uncompensated care") of Critical Access Hospitals (CAHs), rural prospective payment system hospitals (R-PPS), and urban prospective payment system hospitals (U-PPS).[9] The study finds that, across all study years:

- Rural PPS hospitals had the highest uncompensated care median, and urban PPS hospitals had the lowest.
- Rural PPS hospitals with less than $20 million in net patient revenue had the highest median uncompensated care, and urban PPS hospitals with less than $20 million in net patient revenue had the lowest.
- Hospitals affiliated with a health system had higher median uncompensated care than hospitals not affiliated with a health system.
- Government-owned hospitals had the highest median uncompensated care for rural-PPS and urban-PPS, while a small number of for-profit CAHs had the highest median uncompensated care across all groups.

Findings suggest that changes to policies and reimbursement that affect uncompensated care could have a differential effect on hospitals, particularly related to Medicare payment designation, size (as measured by net patient revenue), and ownership.

- *System affiliation*: Rural hospitals with a system affiliation and in financial distress faced a lower risk of closure[14] and exhibited stronger financial performance.[15]
- *Ownership*: Not-for-profit hospitals reported similar or less uncompensated care costs or community benefit compared to for-profit hospitals.[16,17]

METHODS

The 2017-19 study time frame was selected to avoid the extraordinary effects of the COVID-19 pandemic on hospital volumes, revenues, and expenses that occurred starting in 2020. Medicare Cost Report data from 2017-2019 were obtained for all acute care hospitals from the Healthcare Cost Report Information System (HCRIS). Indian Health Service hospitals were not included because of missing data. Cost reports were excluded if a hospital reported: less than 360 days of data in a reporting period; uncompensated care less than or equal to zero or missing; uncompensated care as a percent of operating expense greater than 100 percent; or operating expense with a negative value.[1] Across all study years, there were 78 cost reports with uncompensated care less than or equal to 0; 40 reports with missing uncompensated care; 65 with uncompensated care as a percentage of operating expenses equal to or greater than 100 percent; and one with negative reported operating expense. In total, 144 cost reports were excluded and the final data set included 13,178 Medicare Cost Reports across 2017-2019.

Each hospital was identified by Medicare payment designation; either a Critical Access Hospital (CAH) or a hospital paid under the Prospective Payment System located in a rural area (R-PPS) or in an urban area (U-PPS).[18] Uncompensated care was defined as (charity care + non-Medicare and non-reimbursable Medicare bad debt expense) / operating expense. Uncompensated care as a percentage of operating expense ("uncompensated care") was calculated for each hospital, and the median was calculated for each of the following sub-groups:

- Net patient revenue: <$20 million, $20-$50 million, and >$50 million per year in net patient revenue;
- System affiliation: with and without system affiliation; and
- Ownership: not-for-profit, for-profit, and government owned.

Differences between Medicare payment designations by ownership and system affiliation were tested using Pearson Chi-squared tests and by median net patient revenue with a Kruskal-Wallis test. Kruskal-Wallis tests were also used to determine whether median uncompensated care for each category of net patient revenue, ownership, and system affiliation differed between Medicare payment designations.

The study used the following data from the Medicare Cost Report:

Variable	Medicare cost report worksheet
Cost of charity care	S-10, line 23
Non-Medicare and non-reimbursable Medicare bad debt expense	S-10, line 29
Hospital total operating expenses	G-3, line 4
Net patient revenues	G3, column 1, line 3
Part of a chain organization (System affiliation)	S2 Part I, column 1, line 141
Type of control (Ownership)	S2 Part I, column 1, line 21

RESULTS

Sample Characteristics

Table 1 shows the characteristics of the 2017-19 sample hospitals by Medicare payment designation. Urban-PPS hospitals were the largest by net patient revenue across all study years (e.g., in 2019: $246M vs. $21M for CAH, p<.001). They were also more likely to be affiliated with a health system compared to CAH and R-PPS (2019: 74.7%, 37.9%, and 53.6%, p<.001). In all years, CAHs had a larger proportion of government-owned hospitals (40.5% in 2019) than R-PPS (23.5% in 2019) and U-PPS (10.0% in 2019) and the smallest proportion of for-profit hospitals (4.2% in 2019).

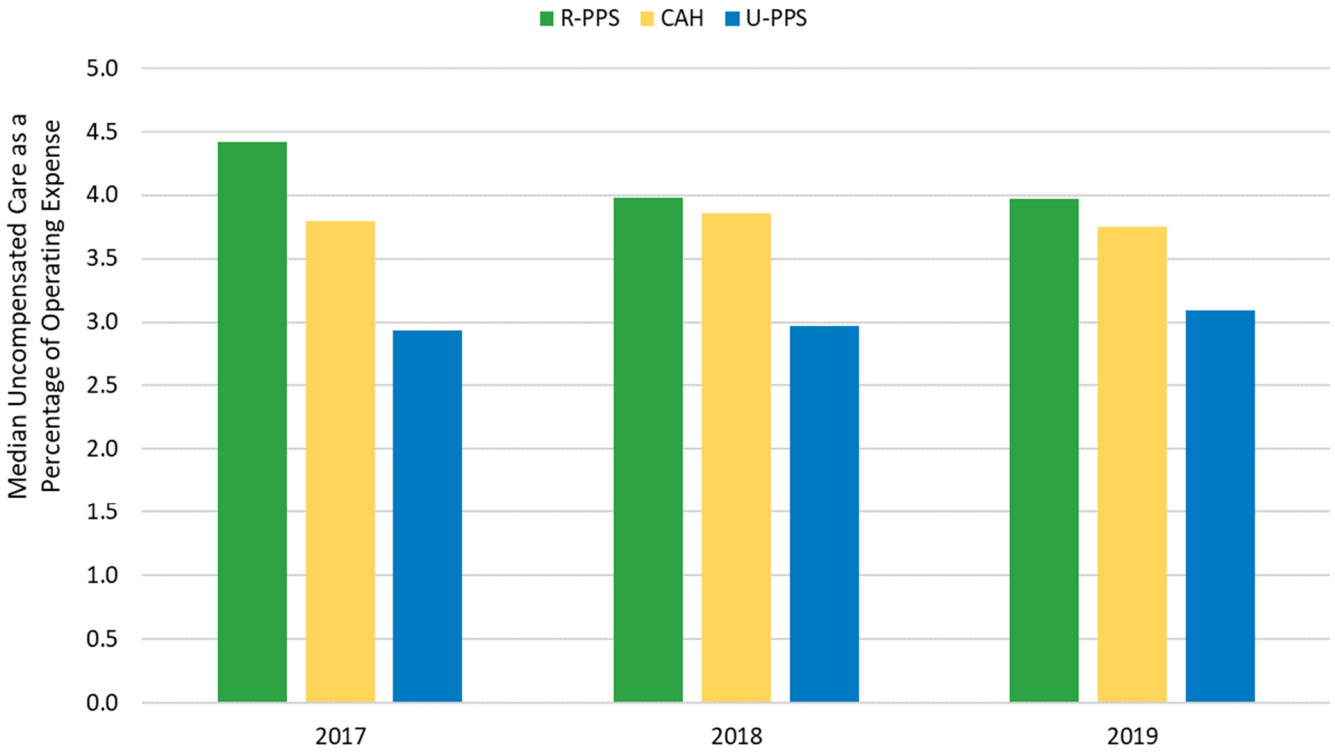
Table 1. 2017-19 Hospital Characteristics by Medicare Payment Designation

		R-PPS	CAH	U-PPS	
2017	n=	940	1,303	2,209	**p-value**
Net Patient Revenue (median in thousands)		$63,236	$19,420	$222,759	<.001
System Affiliation		48.4%	35.9%	71.6%	<.001
No System Affiliation		51.6%	64.1%	28.4%	<.001
Ownership					
Not-for-profit		54.8%	55.1%	62.9%	<.001
For-profit		20.3%	4.9%	27.6%	<.001
Government		24.9%	40.0%	9.6%	<.001
2018	n=	910	1,314	2,178	
Net Patient Revenue (median in thousands)		$64,954	$19,773	$230,062	<.001
System Affiliation		50.8%	36.7%	72.8%	<.001
No System Affiliation		49.2%	63.3%	27.2%	<.001
Ownership					
Not-for-profit		56.0%	54.9%	63.5%	<.001
For-profit		19.9%	5.0%	26.6%	<.001
Government		24.1%	40.1%	10.0%	<.001
2019	n=	888	1,305	2,131	
Net Patient Revenue (median in thousands)		$69,908	$20,934	$246,152	<.001
System Affiliation		53.6%	37.9%	74.7%	<.001
No System Affiliation		46.4%	62.1%	25.3%	<.001
Ownership					
Not-for-profit		57.3%	55.3%	63.9%	<.001
For-profit		19.1%	4.2%	26.0%	<.001
Government		23.5%	40.5%	10.0%	<.001

Rural PPS hospitals had the highest uncompensated care rates

There was a significant difference between median overall uncompensated care as a percent of operating expense by hospital group across all study years (2017, 2018, 2019: p<.001). Figure 1 shows that R-PPS hospitals had the highest median uncompensated care (4.4% in 2017, 4.0% in 2018, and 4.0% in 2019), and U-PPS hospitals had the lowest (2.9% in 2017, 3.0% in 2018, and 3.1% in 2019). CAHs had median uncompensated care of 3.8% in 2017, 3.9% in 2018, and 3.8% in 2019.

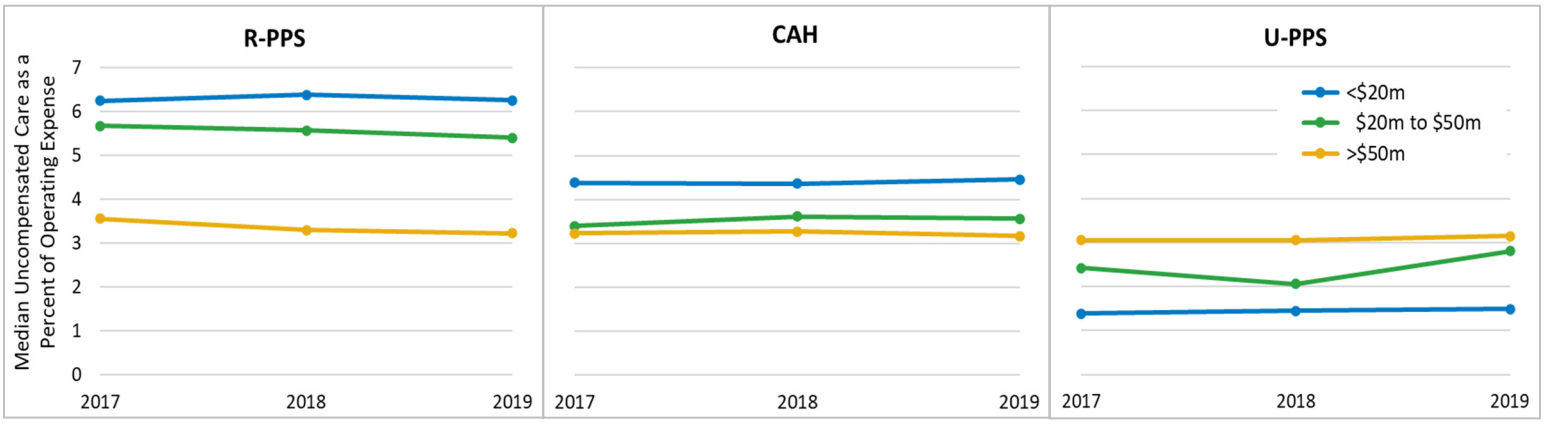
Figure 1. 2017-19 Median Uncompensated Care by Medicare Payment Designation



Median uncompensated care as a percent of operating expense was highest among rural PPS hospitals with less than $20 million in net patient revenue

Figure 2 shows that, across all study years, R-PPS hospitals with <$20 million in net patient revenue had the highest median uncompensated care as a percent of operating expense (6.2% in 2017, 6.4% in 2018, and 6.3% in 2019), and U-PPS hospitals with <$20 million had the lowest (1.4% in 2017, 1.4% in 2018, and 1.5% in 2019). Medicare payment designation types were statistically different for <$20 million (p<.001) and $20-$50 million (p<.001) hospitals for all years. There are two other interesting findings in Figure 2: first, R-PPS, CAHs, and U-PPS hospitals with >$50 million in net patient revenue had similar median uncompensated care percentages (p=0.003 in 2017, p=0.268 in 2018, p=0.326 in 2019). Second, among R-PPS hospitals and CAHs, median uncompensated care is highest among facilities with <$20 million and lowest among facilities with >$50 million in net patient revenue: the opposite relationship is true for U-PPS hospitals.

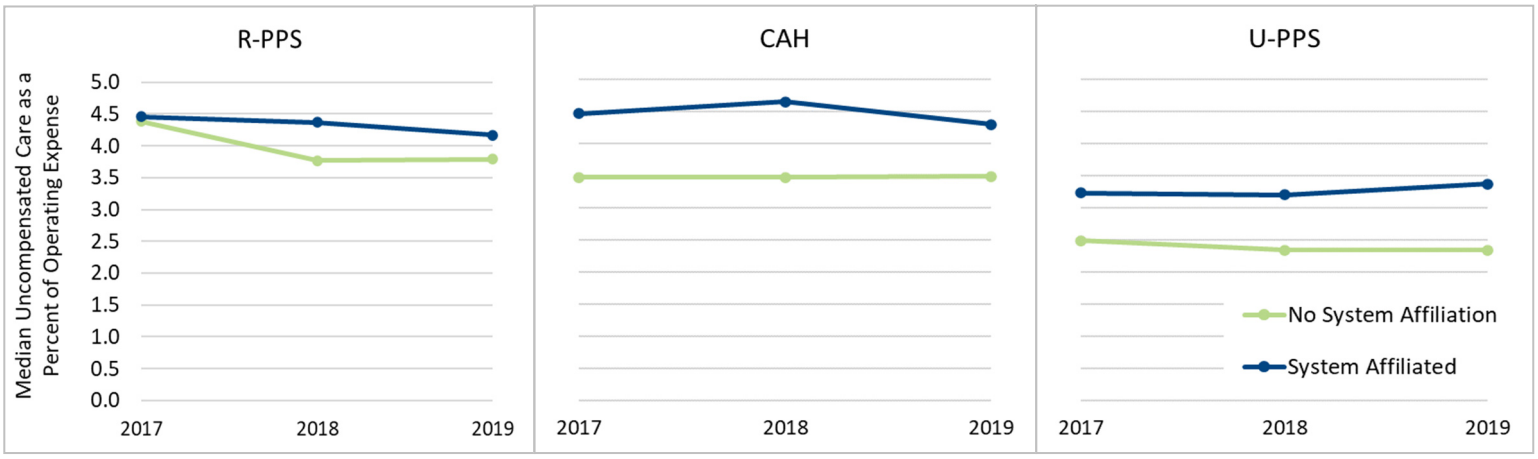
Figure 2. 2017-19 Median Uncompensated Care by Medicare Payment Designation and Net Patient Revenue



Hospitals affiliated with a health system had higher median uncompensated care rates

Across all study years, hospitals affiliated with a health system had higher median reported uncompensated care as a percent of operating expense than hospitals not affiliated with a health system, and the difference between hospital types was significant regardless of affiliation ($p<0.001$ for all years). CAHs with a system affiliation had the highest median uncompensated care (4.5% in 2017, 4.6% in 2018, and 4.3% in 2019), and U-PPS hospitals with no system affiliation had the lowest (2.5% in 2017, 2.3% in 2018, and 2.3% in 2019).

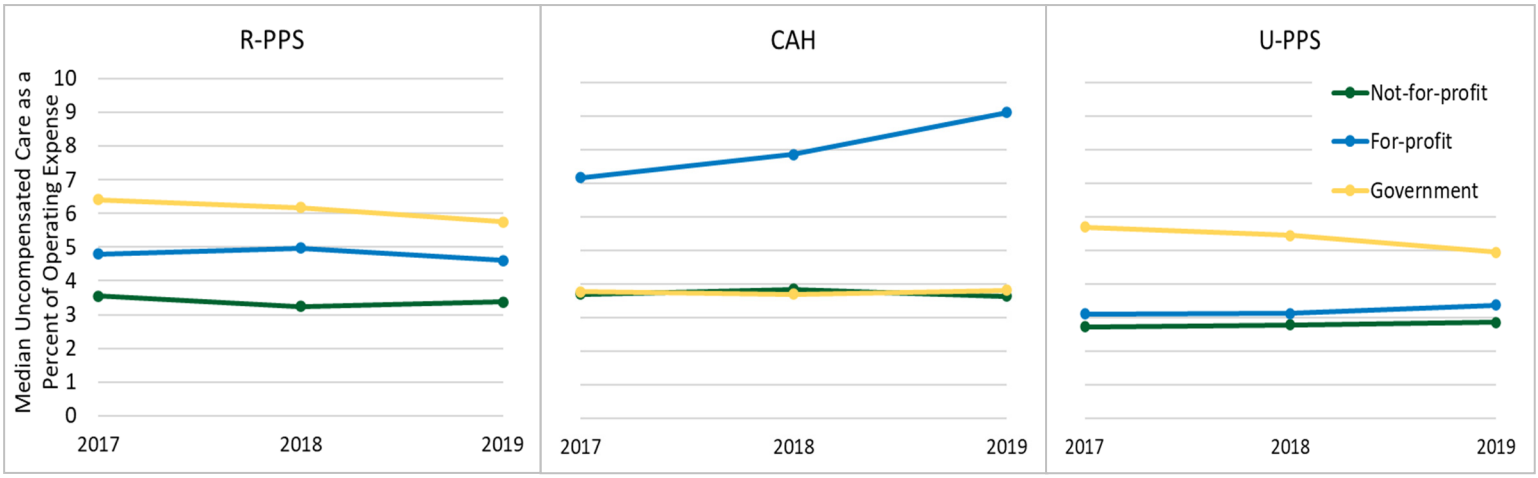
Figure 3. 2017-19 Median Uncompensated Care by Medicare Payment Designation and Health System Affiliation



Uncompensated care varied by ownership

Figure 4 shows that, across all study years, R-PPS and U-PPS hospitals that are government-owned had higher median uncompensated care than not-for-profit R-PPS and U-PPS hospitals, respectively. The relatively small number of CAHs that are for-profit had the highest median uncompensated care (7.2% in 2017, 7.9% in 2018, and 9.1% in 2019), and U-PPS hospitals that are not-for-profit had the lowest (2.7% in 2017, 2.8% in 2018, and 2.8% in 2019). R-PPS, U-PPS, and CAHs had statistically different uncompensated care for each ownership type and in each year ($p<.001$).

Figure 4. 2017-19 Median Uncompensated Care by Medicare Payment Designation and Ownership



DISCUSSION

The purpose of this study is to better understand patterns of uncompensated care rates among rural and urban hospitals. We found that R-PPS hospitals reported the highest median uncompensated care as a percent of operating expense across all study years, and U-PPS hospitals reported the lowest. CAHs and R-PPS hospitals with less than $20 million in net patient revenue (the smallest hospitals) had the highest uncompensated care rates, but U-PPS with less than $20 million (also small) had the lowest. Uncompensated care rates for the largest hospitals (with greater than $50 million in net patient revenue) did not differ by Medicare payment designation. Hospitals without system affiliation had lower uncompensated care than system affiliated hospitals for U-PPS, R-PPS, and CAHs, and affiliated CAHs had the highest. Government-owned had the highest median uncompensated care for R-PPS and U-PPS hospitals, while the small number of CAHs that are for-profit (55 in 2019) had the highest of all hospitals.

There are three main takeaways from this study. First, small R-PPS hospitals continue to face the greatest burden of uncompensated care. Our June 2018 findings brief reported the same finding for 2014-17.[2] Our finding that uncompensated care among hospitals with greater than $50 million in net patient revenue did not differ by Medicare payment designation also suggests that small hospital size and rural location are important in explaining variations in uncompensated care.

Second, although a previous study found that system affiliation may protect some financially distressed rural hospitals from closure,[14] this study finds that hospitals affiliated with a health system had higher median uncompensated care than hospitals not affiliated with a health system. This suggests that health systems may provide financial and non-financial support to affiliated rural hospitals that mediates the consequences of greater uncompensated care. Identification of the types and magnitude of support provided by systems to rural hospitals could be important for understanding how uncompensated care burden can be reduced.

Third, our finding that uncompensated care burden is highest for government-owned PPS hospitals (except for the small number of for-profit CAHs) reaffirms the financial vulnerability of safety-net hospitals.

In aggregate, our findings suggest that changes to policies and reimbursement that affect uncompensated care could have a differential effect on hospitals, particularly related to Medicare payment designation, size as measured by net patient revenue, and ownership. Reductions in Disproportionate Share Hospital payments, expiration of the Medicare Dependent Hospital (MDH) designation and low-volume adjustment, and sequestration are examples of changes that likely would have varied effects on different types of rural hospitals. Policymakers should consider that not all rural hospitals will be able to cope with the impacts of these changes.

A previous study asserted that uncompensated care makes health care disparities in rural areas worse,[19] but there is limited research on how uncompensated care affects quality of care among rural hospitals. A future research effort could identify the consequences of the heightened uncompensated care burden among rural hospitals on quality of care and patient outcomes.

There are several limitations to this study related to the nature of Medicare Cost Reports. First, there are well documented reporting variations in Worksheet S-10.[20] Second, system affiliation is not perfectly captured due to under-reporting. Hospitals that did not report affiliation status are grouped with those that reported no affiliation. This may inflate the number of hospitals with no system affiliation described.

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