2018-23 Profitability of Rural and Urban Hospitals by Medicare Payment Designation

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BACKGROUND

Medicare Payment Designations

Rural hospitals have a significant role in their communities, often as the sole health care facility offering essential medical services to their respective communities. However, many rural hospitals have faced long-term unprofitability,[1] and 146 rural hospitals closed between January 2010 and December 2023.[2] Recognizing that many rural hospitals are the only health care facility in their community and that their survival is vital to ensure access to health care, Federal policymakers in the 1980s and 1990s created classifications of rural hospitals that qualify for special payment provisions under Medicare: Critical Access Hospitals (CAHs), and four types of special payment designations for Prospective Payment System (PPS) hospitals: Medicare Dependent Hospitals (MDHs), Sole Community Hospitals (SCHs), Rural Referral Centers (RRCs), and Essential Access Community Hospitals (EAC).[3]

The North Carolina Rural Health Research Program (NC RHRP) has been tracking profitability of rural hospitals by Medicare payment designation for more than a decade. In a 2020 study, we found that: overall, profitability of rural hospitals decreased while the profitability of urban hospitals increased between 2016 and 2018; compared to other hospitals, RRCs and urban hospitals had the highest profitability in every year between 2016 and 2018; and in 2018, rural PPS hospitals with 0-25 beds and MDHs had the lowest profitability compared to urban hospitals and other rural hospitals.[4]

KEY FINDINGS

This study compares profitability of three types of hospitals in both urban and rural locations:

- Critical Access Hospitals (CAHs),
- Prospective Payment System-only (PPS) hospitals by number of acute beds (<26, 26-50, >50), and
- PPS hospitals with special payment designations [Medicare Dependent Hospitals (MDH), Rural Referral Centers (RRC), and Sole Community Hospitals (SCH)].

The study includes two years before COVID-19 (2018-19, 2019-20) and three years after COVID-19 (2020-21, 2021-22, 2022-23). Taking into account Public Health Emergency funds received during the pandemic, we found:

- Median profitability of both rural and urban hospitals increased over the first four periods (except for a small downturn of urban hospitals in 2020-21), but there was a large decrease in profitability of both rural and urban hospitals in 2022-23.
- Median profitability of rural hospitals was less than urban hospitals in 2018-19 and 2019-20, but higher than for urban hospitals in 2020-21, 2021-22, and 2022-23.
- In the last period (2022-23), the highest median profitability was urban PPS with 25 or fewer beds (PPS <26), and the lowest was rural RRC.
- In 2022-23, median profitability of CAHs, PPS <26, PPS 26-50, MDHs, and RRCs in rural locations was lower than for the same types of hospitals in urban locations. Median profitability of PPS >50 and SCHs in rural locations was higher than for the same types of hospitals in urban locations.
- Profitability of rural hospitals in 2020-21 and 2021-22 was influenced by the Public Health Emergency funding distributed during the COVID-19 pandemic.

COVID-19

Since our 2020 study was published, the global COVID-19 pandemic emerged. COVID-19 increased financial pressures on hospitals and health systems, with cancelled procedures, decreased patient volume, and increased costs for treating COVID-19 patients.[5] Rural hospitals had particular difficulty responding to the pandemic which compounded their pre-existing challenges.[6] In response, the federal government provided financial support through Public Health Emergency (PHE) funding utilizing Provider Relief Funds, Paycheck Protection Program, and other funds,[7] to compensate for the loss in revenue and support high costs due to the pandemic.

In a previous study, we discuss how timing differences in reporting of PHE revenue versus PHE expenses on Medicare cost reports could distort reported profitability in 2020 and 2021.[8] For this reason, in this study we considered it important to clearly separate study years without PHE funds (pre-COVID-19 years) and study years with PHE funds (COVID-19 years). Therefore, the purpose of this brief is to describe the profitability of urban and rural hospitals by Medicare payment designation over a five-year period consisting of two years before and three years after COVID-19.

STUDY METHOD

Data

Financial data were obtained from hospital cost report data produced by the Centers for Medicare & Medicaid Services (CMS) Healthcare Cost Report Information System (HCRIS). We excluded cost reports for Indian Health Service hospitals (due to lack of data), cost reports with days in period < 360, and cost reports where net patient revenue was ≤ $0. Hospitals were defined as rural using the 2022 definition by Federal Office of Rural Health Policy (FORHP).[9]

Measure of Profitability

Hospital profitability is expressed as total margin, which is defined as the ratio of net income to total revenue. This ratio provides a measure of the hospital's profit relative to the total revenue it generates. To illustrate, a hospital with a five percent total margin signifies that for every dollar of revenue generated, the hospital makes five cents in net income. The total margin definition and source of data from the Medicare Cost Report are shown below.

	Description	Medicare Cost Report Source
Numerator	Net income	Worksheet G Line 29
Denominator	Total revenue	Worksheet G Lines 3 + 25

COVID-19 PHE funding is included in calculation of total margin.

Hospital Type

We assign each hospital to one of three types: CAH, PPS-only, and PPS with special payment designation. PPS-only are subdivided into three categories of acute bed size, and PPS with special payment designation subdivided by MDH, SCH, and RRC. The RRC category includes hospitals designated as RRCs, MDH/RRCs, Essential Access Community Hospitals (EAC)/RRCs, and SCH/RRCs. Cost reports for one hospital with EAC payment classification were included under the SCH classification type.

Hospital type	Category	Label
Critical Access Hospital		CAH
Prospective Payment System only	<26 acute beds	PPS <26
	26-50 acute beds	PPS 26-50
	>50 acute beds	PPS >50
Prospective Payment System with Special Payment Designation	Medicare Dependent Hospital	MDH
	Rural Referral Center	RRC
	Sole Community Hospital	SCH

Study Periods

For study purposes, we defined the start of the COVID-19 period as April 1, 2020, because the PHE funding was first distributed to hospitals in April 2020.

Period	Data Label	Cost Reports Ending Between	
Before COVID-19	2018-19	Apr 1, 2018	Mar 31, 2019
	2019-20	Apr 1, 2019	Mar 31, 2020
After COVID-19	2020-21	Apr 1, 2020	Mar 31, 2021
	2021-22	Apr 1, 2021	Mar 31, 2022
	2022-23	Apr 1, 2022	Mar 31, 2023

Number of Cost Reports by Hospital Type, Year, and Location*

Hospital Type	2018-19		2019-20		2020-21		2021-22		2022-23	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
CAH	1,254	56	1,253	53	1,254	56	1,268	55	1,276	56
PPS <26	35	120	35	109	40	110	42	122	42	128
PPS 26-50	119	132	119	136	109	142	111	143	112	133
PPS >50	126	1,597	115	1,534	113	1,435	108	1,360	100	1,306
MDH	130	6	131	10	125	14	125	17	120	17
RRC	221	251	221	308	221	406	215	496	220	544
SCH	270	27	264	27	277	27	276	26	271	25
Total	2,155	2,189	2,138	2,177	2,139	2,190	2,145	2,219	2,141	2,209

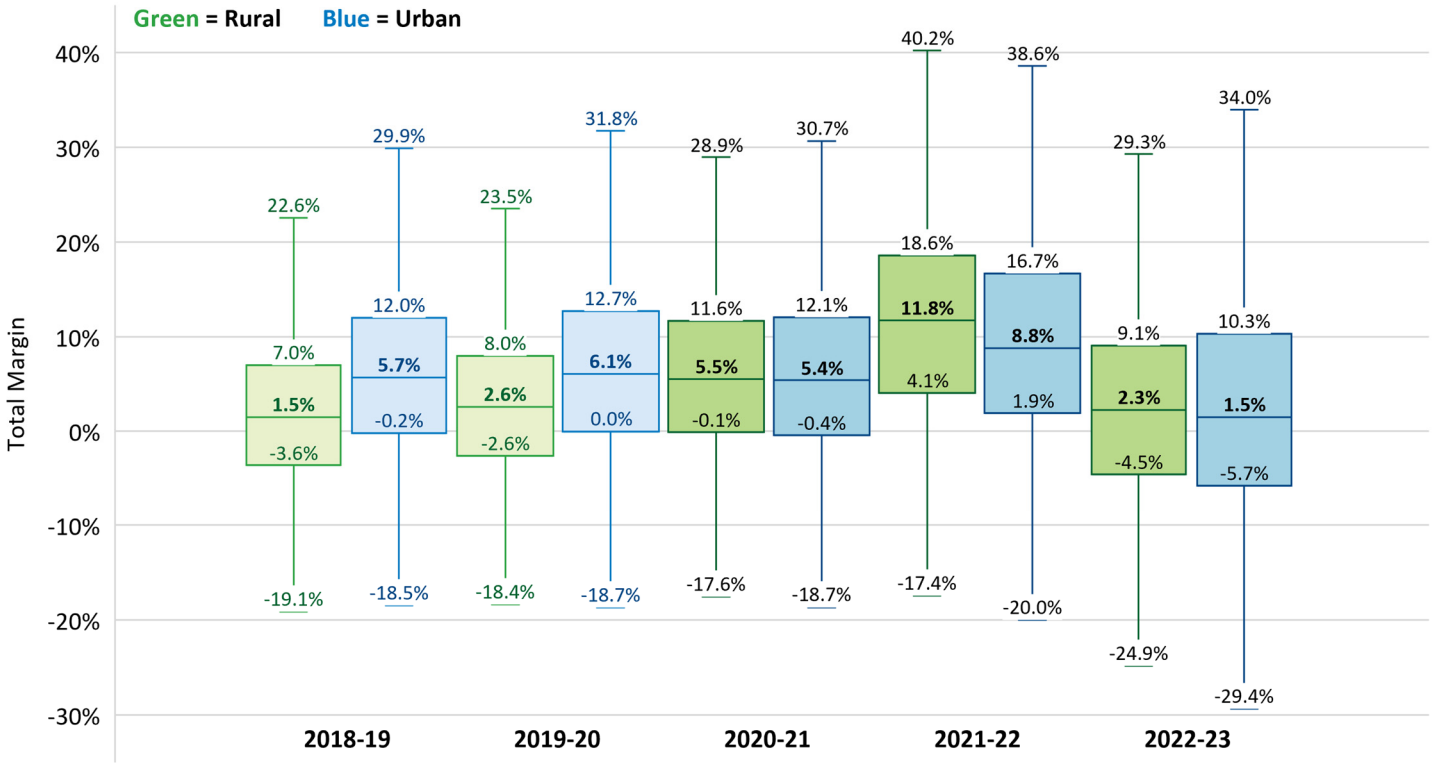
*The number of hospitals having total margin values for Medicare cost reports, having at least 360 days in production, falling between April 1, 2018 and March 31, 2023.

RESULTS

Figure 1 shows the distribution of total margins of hospitals in rural and urban locations by year. In the shaded box, the horizontal line in the middle is the median, the top of the box is the 75th percentile, and the bottom of the box is the 25th percentile total margin. The interquartile range (IQR) is the length of the box in a box-and-whisker plot. The "whiskers" above and below the shaded box represent values that lie more than one and a half times the length of the box from either end of the box. That is, the lower whisker is Q1 – 1.5×IQR, and the upper whisker is Q3 + 1.5×IQR.

Overall, the median total margin increased between 2018-19 and 2021-22 for both rural (from 1.5% to 11.8%) and urban hospitals (5.7% to 8.8%), but there was a large decrease in profitability of both rural and urban hospitals in 2022-23 (2.3 and 1.5 percentage points, respectively). In 2018-19 and 2019-20, we can also observe that the blue boxes (the majority of urban hospital total margin values) are higher than that of the green boxes (the majority of rural hospital total margin values), indicating that urban hospitals had a greater total margin when compared to the total margin of rural hospitals in those years. In the year 2020-21, rural and urban hospitals had little difference in their total margins, and in 2021-22 and 2022-23, the total margin of rural hospitals is greater than that of urban hospitals.

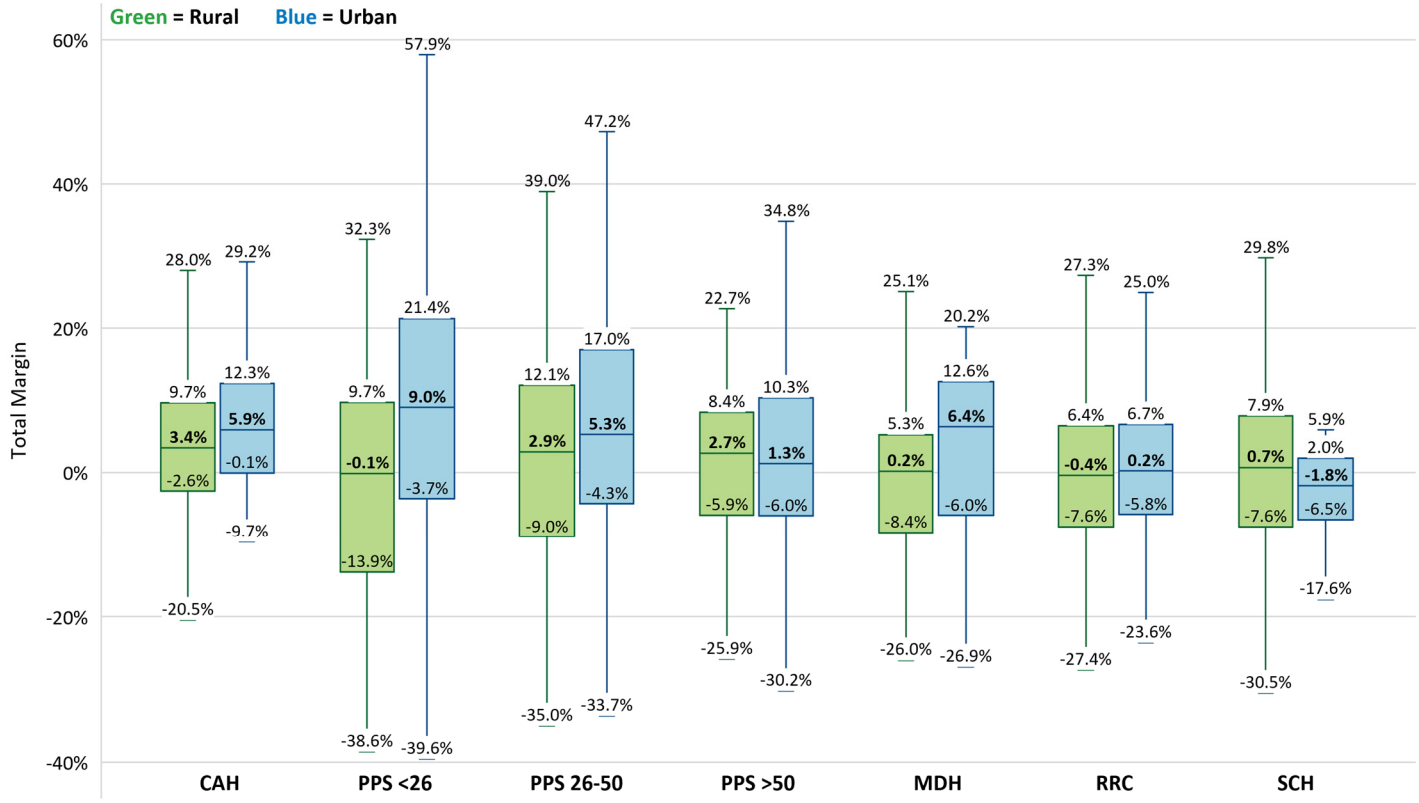
Figure 1. Distribution of Total Margins of Hospitals in Rural and Urban Locations by Year



Note: PHE funding started in 2020-21

Figure 2 shows the distribution of 2022-23 total margins of CAHs, PPS-only, and PPS with special payment designations in urban and rural locations. The highest median profitability was urban PPS <26, and the lowest was rural RRC. In 2022-23, median profitability of CAHs, PPS <26, PPS 26-50, MDHs, and RRCs in rural locations was lower than for the same types of hospitals in urban locations. Median profitability of PPS >50 and SCHs in rural locations was higher than for the same types of hospitals in urban locations.

Figure 2. Distribution of 2022-23 Total Margins of CAHs, PPS-only, and PPS with Special Payment Designations in Urban and Rural Locations



Appendices A, B, C, and D respectively, show the distribution of 2018-19, 2019-20, 2020-21, and 2021-22 total margins of CAHs, PPS-only, and PPS with special payment designations in urban and rural locations.

DISCUSSION

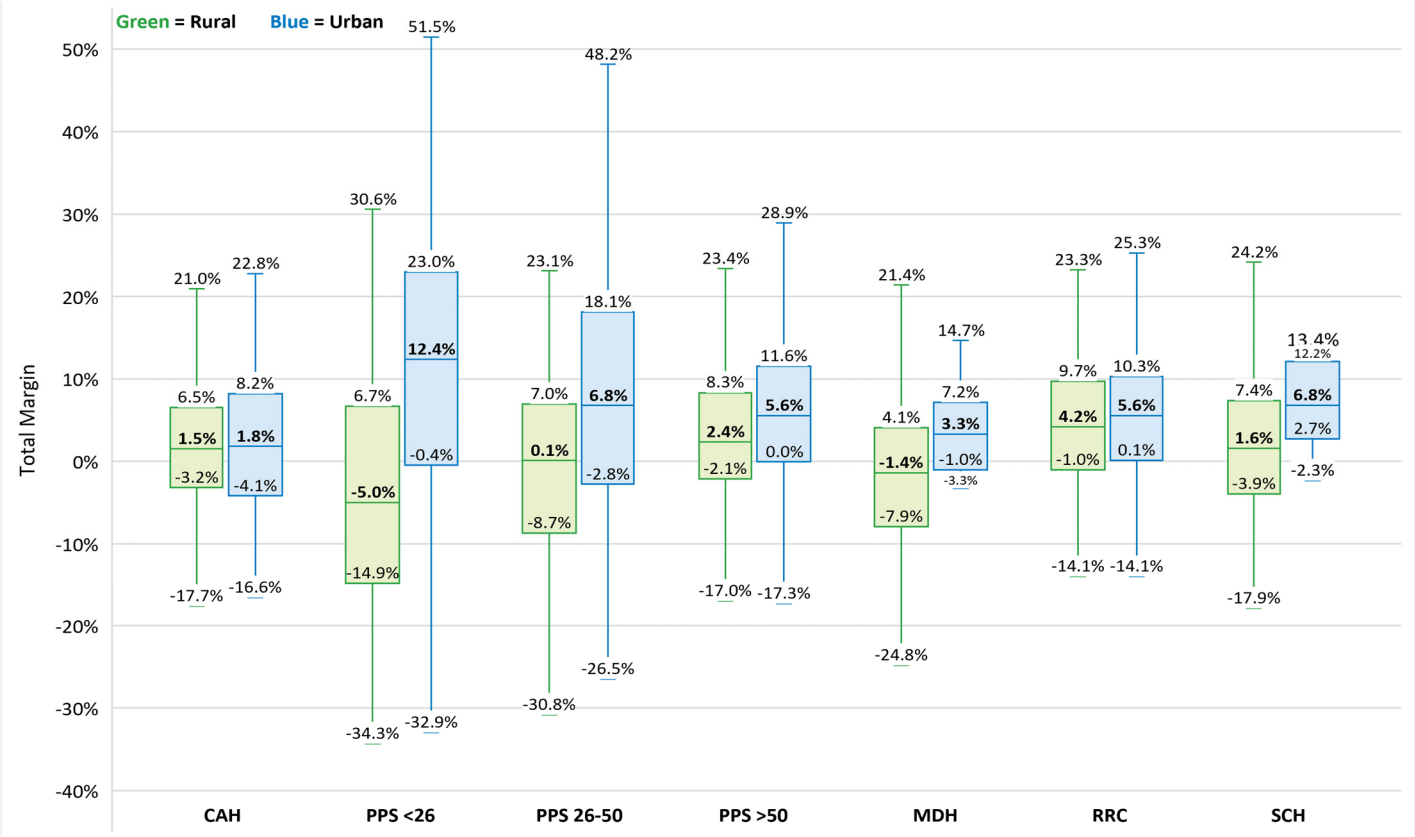
The purpose of this brief is to describe the profitability of urban and rural hospitals by Medicare payment designation over a five-year period consisting of two years before COVID-19 (2018-19 and 2019-20) and three years after COVID-19 (2020-21, 2021-22, and 2022-23). We found median profitability of both rural and urban hospitals increased over the first four study periods (except for a small downturn of urban hospitals in 2020-21), but there was a large decrease in profitability of both rural and urban hospitals in 2022-23. Median profitability of rural hospitals was less than urban hospitals in 2018-19 and 2019-20, but higher than for urban hospitals in 2020-21, 2021-22, and 2022-23. These findings may reflect the impact of Public Health Emergency Funds received by hospitals during COVID-19.

This study also found that, in the last period (2022-23), the highest median profitability was urban PPS <26 (n=128), and the lowest was rural RRC (n=220). In 2022-23, median profitability of CAHs, PPS <26, PPS 26-50, MDHs, and RRCs in rural locations was lower than for the same types of hospitals in urban locations. Median profitability of PPS >50 and SCHs in rural locations was higher than for the same types of hospitals in urban locations.

Profitability of rural hospitals in 2020-21 and 2021-22 was influenced by PHE funding distributed during the COVID-19 pandemic.[10] The PHE funds were an important financial lifeline for many rural hospitals and likely contributed to the reduction in the number of rural hospital closures,[11] with only three recorded closures in the year 2021 and seven in the year 2022. However, the PHE funds were temporary and are now fully distributed, and the effect is shown in the large decrease in profitability in 2022-23. Long-term financial pressures remain, and profitability of rural hospitals may be returning to pre-pandemic levels. This puts rural hospitals at higher risk of financial distress, complete closure, or conversion of the hospital to some other type of non-inpatient health care facility. For these reasons, it is important for policy makers to carefully interpret profitability increases during the pandemic and to recognize the long-term financial challenges facing rural hospitals.[8]

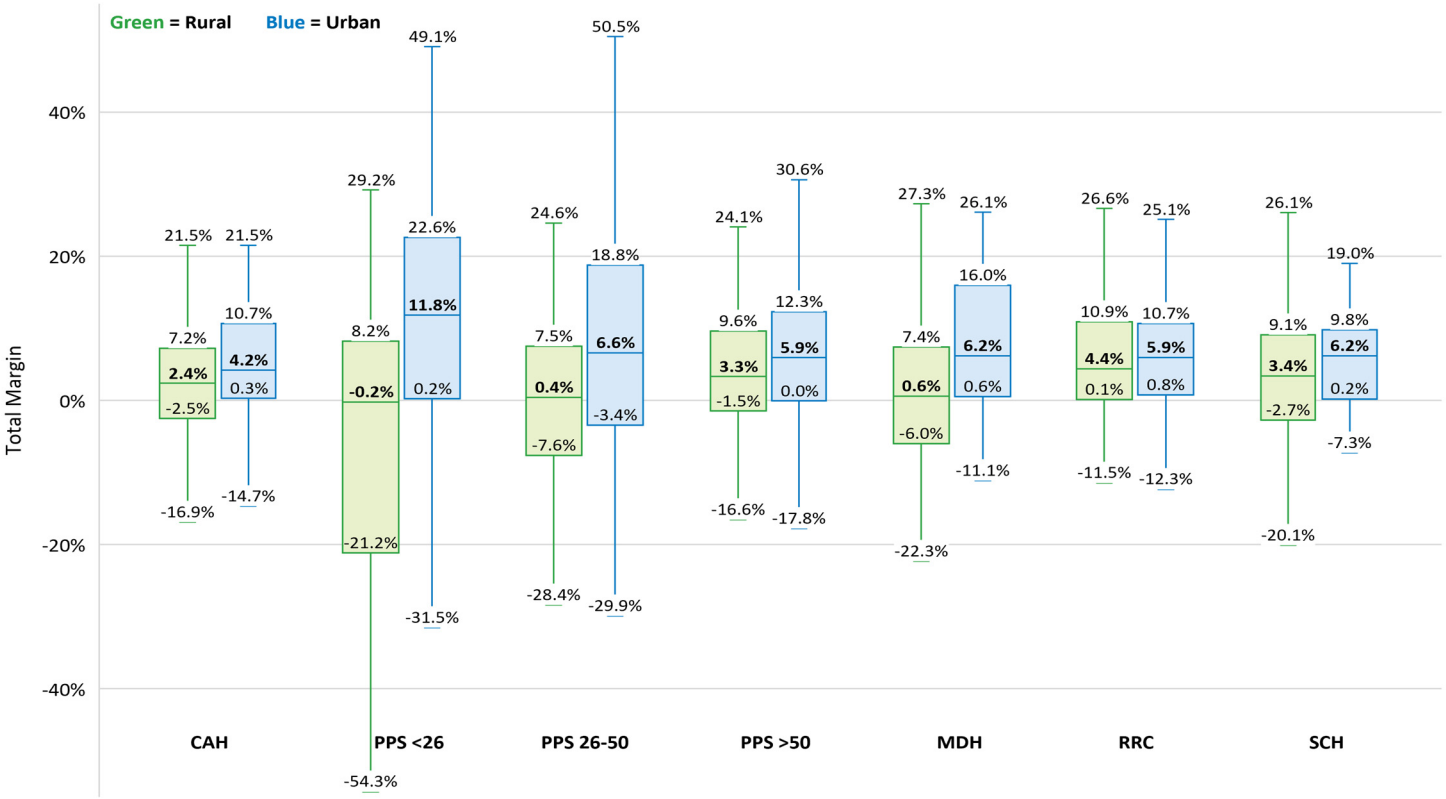
APPENDIX A:

Distribution of 2018-19 Total Margins of CAHs, PPS-only, and PPS with Special Payment Designations in Urban and Rural Locations



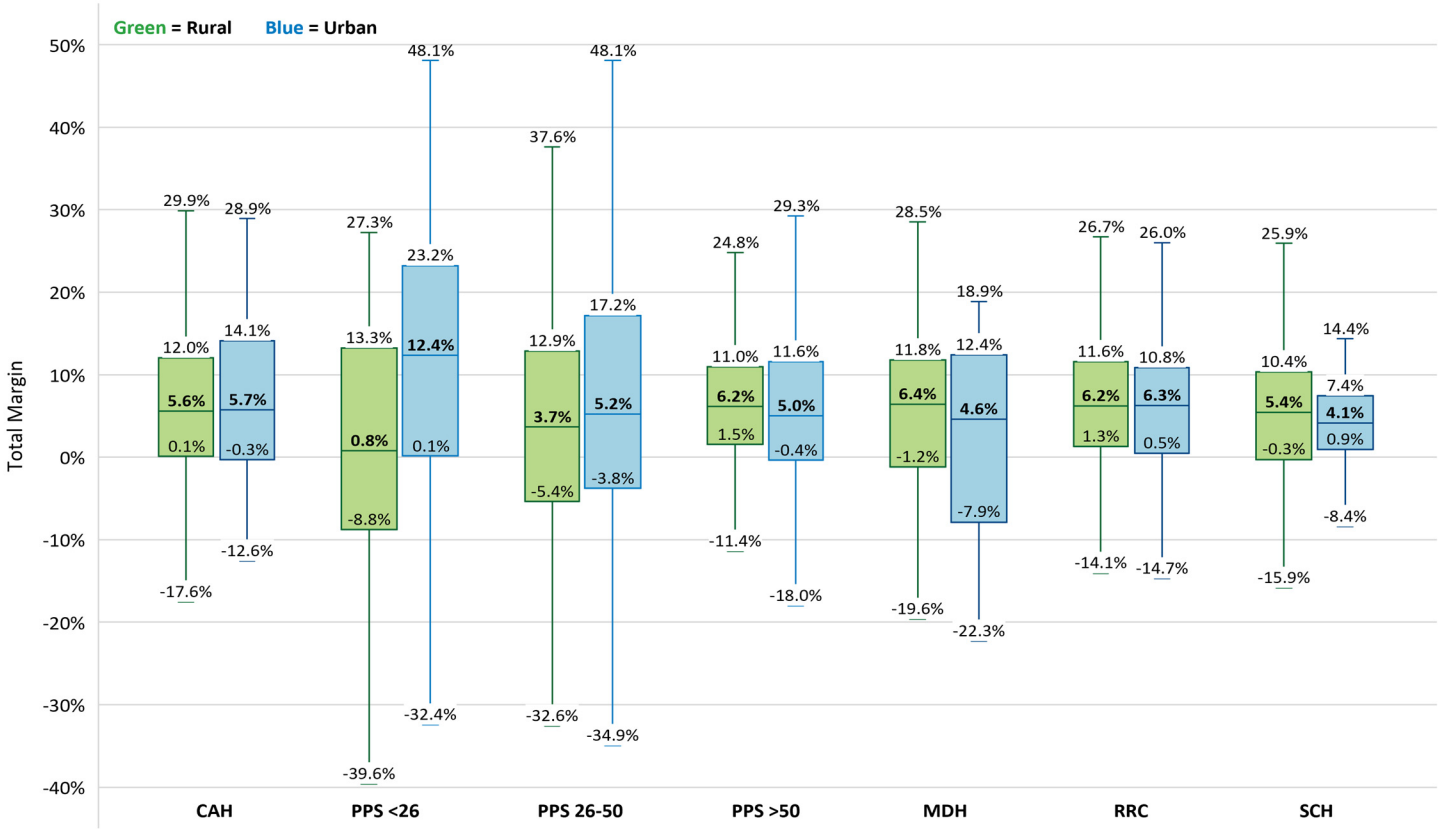
APPENDIX B:

Distribution of 2019-20 Total Margins of CAHs, PPS-only, and PPS with Special Payment Designations in Urban and Rural Locations



APPENDIX C:

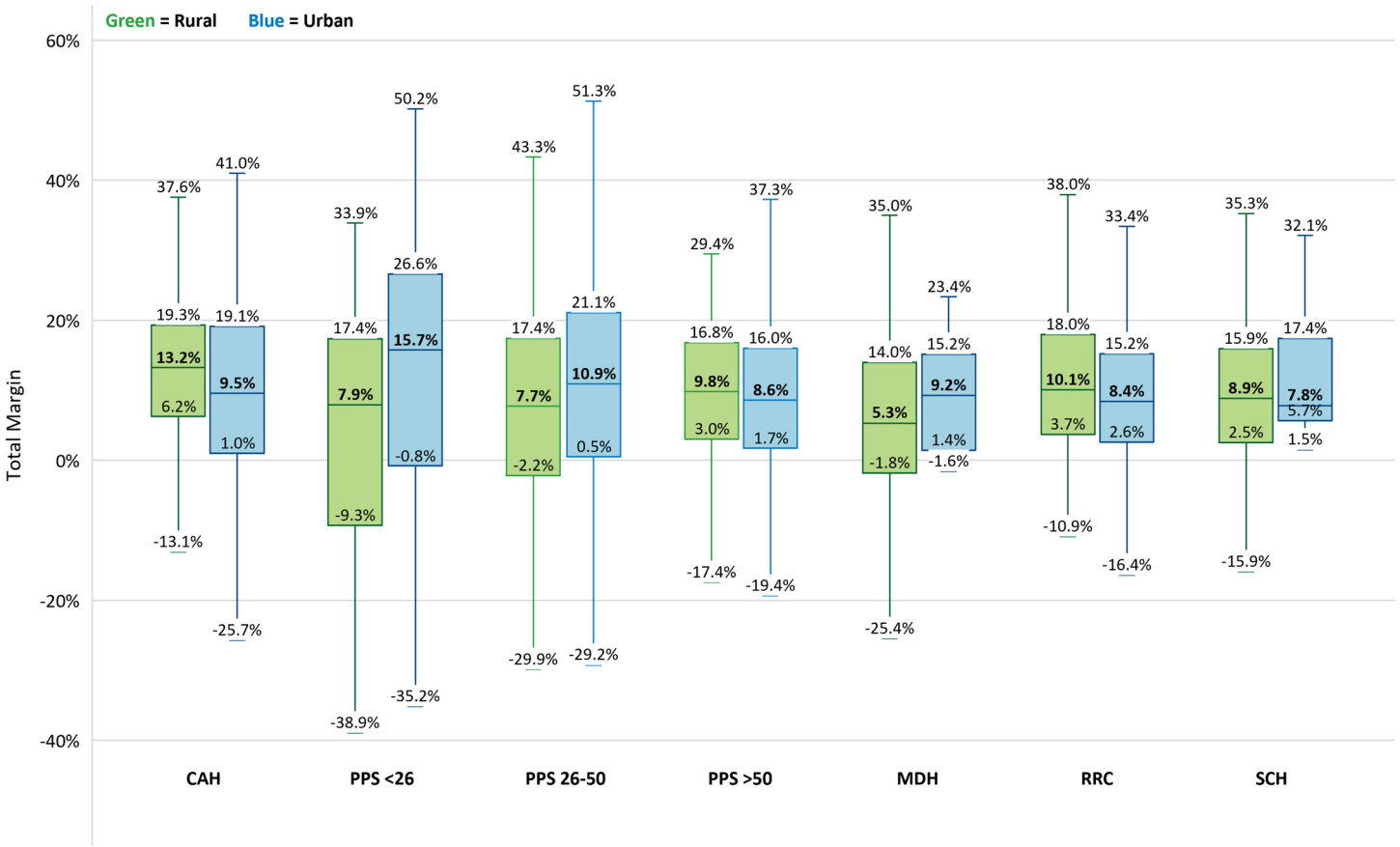
Distribution of 2020-21 Total Margins of CAHs, PPS-only, and PPS with Special Payment Designations in Urban and Rural Locations



Note: PHE funding started in 2020-21

APPENDIX D:

Distribution of 2021-22 Total Margins of CAHs, PPS-only, and PPS with Special Payment Designations in Urban and Rural Locations



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