



## Rural/Urban and Regional Variation in the 2019 CMS Hospital Wage Index

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### BACKGROUND

The Medicare hospital Inpatient Prospective Payment System (IPPS) is designed to pay hospitals for services provided to Medicare beneficiaries based on a national standardized amount adjusted for the patient's condition and related treatment. Further, Social Security Act Section 1886(d)(3)(E) requires that the standardized amount be adjusted for differences in hospital wage levels, which the Centers for Medicare & Medicaid Service (CMS) implemented through the wage index system. CMS also uses the hospital wage index for the Outpatient Prospective Payment System (OPPS), as well as payment calculations for skilled nursing facilities, inpatient rehabilitation facilities and other providers, but not Critical Access Hospitals (CAHs), which are exempt because they are not paid under the IPPS. In computing the wage index, CMS calculates an average hourly wage for each urban and rural area (total wage costs divided by total hours for all hospitals in the geographic area) and a national average hourly wage (total wage costs divided by total hours for all hospitals in the nation). A labor market area's wage index value is the ratio of the area's average hourly wage to the national average hourly wage.

### KEY FINDINGS

- Rural hospitals' median 2019 wage index is 0.1251 points lower than the median urban hospital index (urban median 0.9730 – rural median 0.8479).
- Rural hospital wage index medians are lower than urban hospital wage index medians in every Census region.
- The median rural wage index is lowest in the South Census region.
- The median rural wage index is lower for hospitals in more remote and less populated areas (i.e., lower for hospitals with a FAR code<sup>2</sup> than hospitals without a FAR code).
- Southern states account for 14 of the 20 states with the lowest median hospital wage indices.

In November 2018, the Office of Inspector General (OIG) issued a study entitled “Significant Vulnerabilities Exist in the Hospital Wage Index System for Medicare Payments.”<sup>1</sup> The OIG identified four significant vulnerabilities in the wage index system:

- 1) CMS lacks the authority to penalize hospitals that submit inaccurate or incomplete wage data; and noted instances where some hospitals submitted inaccurate wage data and were inadvertently overpaid by Medicare;
- 2) Medicare administrative contractor (MAC) limited reviews do not always identify inaccurate wage data;
- 3) the rural floor decreases wage index accuracy; and
- 4) hold-harmless provisions in Federal law and CMS policy pertaining to geographically reclassified hospitals' wage data decrease wage index accuracy.

The OIG concluded that these vulnerabilities mean that wage indices may not always accurately reflect local labor prices and, therefore, Medicare payments to hospitals and other providers may not be appropriately adjusted to reflect local labor prices.

The hospital wage index has also been criticized recently by legislators:

- *May 2018 Senate Finance Committee.* At a hearing entitled “Rural Health Care in America: Challenges and Opportunities,” Senator Cassidy stated that “Under current law, based on their geographic area, rural hospitals in my state cannot compete with the urban hospitals because of a Medicare policy that tells ... urban hospitals ‘we are going to give you more.’ ... The lack of a ceiling or floor for the Medicare wage index gives a perverse incentive for the urban hospitals to keep increasing wages and makes it harder for a rural hospital in Louisiana or Iowa or Tennessee to compete ... Senator Isaacson has a bill which I co-sponsored to put a floor under the Medicare wage index which we do think would help rural hospitals substantially.”<sup>3</sup>
- *May 2018 Senate Appropriations Subcommittee.* As reported in Modern Healthcare, during a hearing on the U.S. Department of Health and Human Services' (HHS) fiscal year 2019 budget proposal, “Senators asked HHS Secretary Alex Azar why the CMS' newly unveiled rural health strategy does not address the Medicare wage index, which they claim poses one of the greatest threats to access to care in rural areas. ... Senator Lamar Alexander called the wage index discriminatory and said it's leading some hospitals to close. ... Azar called the wage index one of the most vexing issues facing his agency because it's structured to be budget neutral. As a result, the agency couldn't change the way rates are paid in one state without it impacting another state he said in response to Alexander's question.”<sup>4</sup>
- *March 2019 Alabama Congressional Delegation.* Members of the Alabama Congressional delegation submitted a letter to Seema Verma, Administrator of CMS, stating the following. “...we encourage you to provide relief from the increasing disproportion of reimbursement created by the Medicare wage index, a fundamentally flawed and administratively burdensome system. The wage index has created a unique situation that is negatively impacting the health care system in Alabama. Most recently, Georgiana Medical Center in Georgiana, Alabama, announced its plans to close, making it the thirteenth hospital in our state to close since 2011. If left unaddressed, many more hospitals in Alabama could follow suit, and the wage index will continue to be a major contributor.” The Delegation also cited the November 2018 OIG report's findings stating, “With the lowest wage index in the country, both our urban and rural hospitals have suffered from the estimated \$140.5 million in overpayments [made to other states] that were illustrated in the report.”<sup>5</sup>
- *September 2018 Senate Subcommittee on Primary Health and Retirement Security.* According to Healthcare Business News, “... Rural hospital advocates urged senators to pass the Fair Medicare Hospital Payments Act of 2017, which would create a national minimum Area Wage Index (AWI) of 0.874. ‘The intent of the AWI was to recognize that costs were higher in rural areas and therefore you’d have to pay more [in salary] to get people there, and somewhere along the way it got turned on its head,’ Alan Levine, executive chairman, president, and CEO of Ballad Health in Johnson City, Tennessee, told a Senate panel on September 25, 2018. ... The push to change the AWI drew bipartisan support from senators that have large rural areas in their states. Sen. Lamar Alexander (R-Tenn.) said he had spoken this week to hospital executives in his state who emphasized the AWI challenge and urged action. Levine stated that ‘The AWI is a major problem for our country’ and passage of the AWI bill ‘would be one of the single most important things you can do for rural hospitals and nonurban hospitals.’”<sup>6</sup>

On April 23, 2019, CMS released its annual proposed update for the hospital IPPS for fiscal year 2020 that starts in October 2019.<sup>7</sup> In the proposed update, CMS recognizes there are disparities in the current wage index system. To address these disparities, CMS is proposing that hospitals with a wage index value below the 25th percentile get an increase that is “half the difference between the otherwise applicable wage index value for that hospital and the 25th percentile wage index value across all hospitals” and decreasing the wage index for hospitals above the 75th percentile so “Medicare spending does not increase as a result of this proposal.” For 2020, CMS is also proposing to remove the urban-to-rural hospital reclassifications used to calculate the rural floor wage index. In addition, CMS plans to mitigate payment decreases due to the new rule with a 5-percent cap on any decrease in a hospital’s wage index from its final wage index for fiscal year 2019.<sup>8</sup>

In the CMS fact sheet about the proposed 2020 IPPS update, there is a subsection entitled “Rethinking Rural Health” where it is stated that “In last year’s proposed rule, we invited comments on, and suggestions, and recommendations for changes to the Medicare wage index. Many responses reflected a common concern that the current wage index system perpetuates and exacerbates the disparities between high and low wage index hospitals. To help address these wage index disparities, we are proposing changes to the wage index calculation.”<sup>9</sup>

To help provide federal policy makers with a better understanding of the effect of the design and application of the hospital wage index on rural hospitals, **this study describes the geographic variation of the 2019 hospital wage index by rural/urban definition,<sup>10</sup> Census region, Frontier and Remote Area (FAR) codes,<sup>2</sup> and state.** This information can assist policy makers in their analysis and consideration of strategies and interventions to maintain rural hospital viability and access to health care by rural communities.

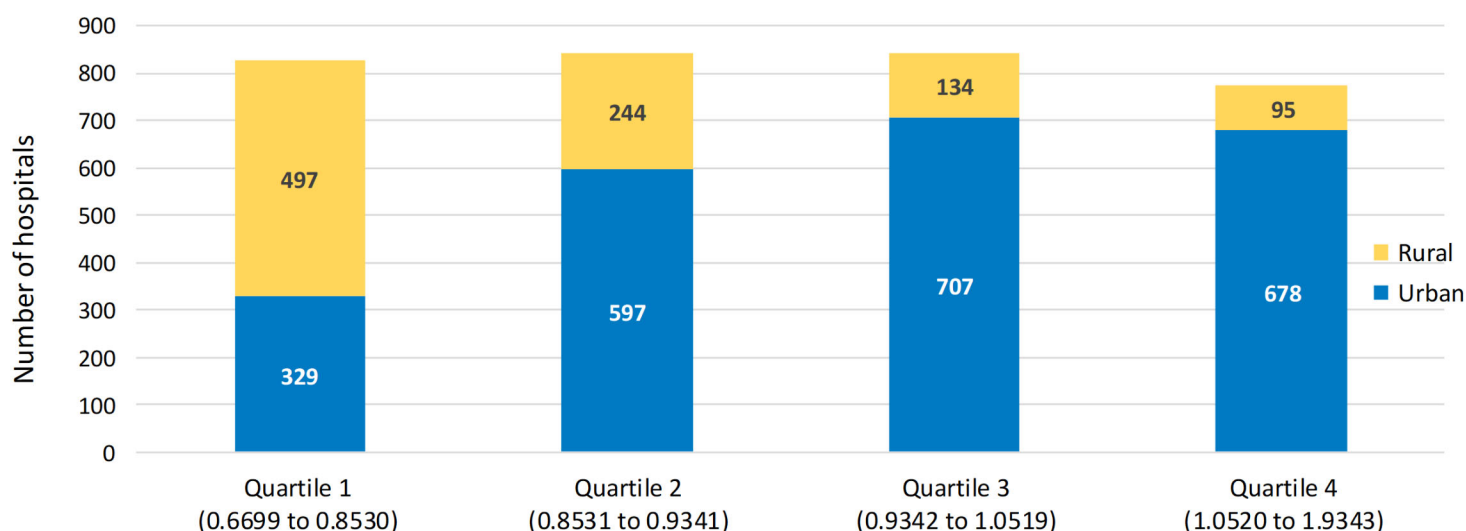
## METHOD

Hospital wage index values were obtained from the FY 2019 Hospital IPPS final rule impact file (Correction Notice).<sup>11</sup> Hospital financial information was obtained from the CMS Healthcare Cost Report Information System (September 30, 2018). Hospitals were classified as rural using the definition of the Federal Office of Rural Health Policy.<sup>12</sup> Facilities in Puerto Rico are excluded because of data limitations.

## RESULTS

Figure 1 shows the 2019 wage index quartiles for all rural and urban hospitals. The figure and accompanying data table show that most rural hospitals are in the first and second quartile (with the lowest indices) while most urban hospitals are in the third and fourth quartiles (with the highest wage indices). Fifty-one percent of rural hospitals are in the first quartile, and 60 percent of urban hospitals are in the third and fourth quartiles compared to only 24 percent of rural hospitals. The median rural hospital wage index is 0.1251 points less than the median urban hospital wage index (urban median 0.9730 – rural median 0.8479), and there is a similar difference in the mean indices.

**Figure 1. 2019 Wage Index Quartiles, Rural and Urban Hospitals**



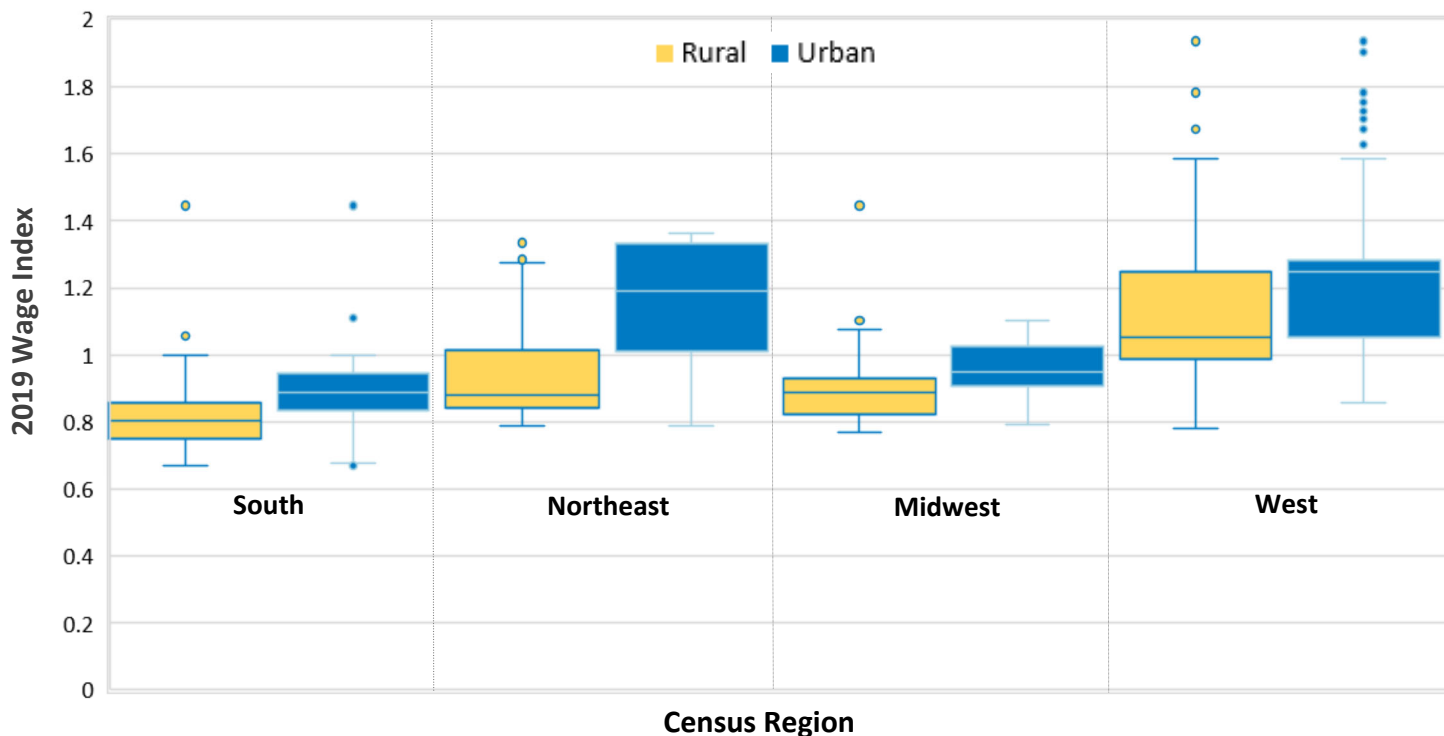
Note: Quartiles include slightly different numbers of hospitals because more than one hospital has a wage index value identical to quartile wage index value.

	Number of Hospitals	2019 Wage Index			
		Minimum	Median	Mean	Maximum
Rural	970	0.6699	0.8479	0.8887	1.9343
Urban	2,311	0.6699	0.9730	1.0309	1.9343
Total	3,281	0.6699	0.9342	0.9888	1.9343

Note: Total number of hospitals for the figure and data table includes rural and urban hospitals with a 2019 wage index (3,332) excluding hospitals in Puerto Rico (51), which equals 3,281. Included in the data are Indian Health Service (IHS) hospitals, all of which have a 2019 wage index of 1.4448 (in AZ, MN, MS, MT, NM, NC, ND, OK, and SD) or a 2019 wage index of 1.9343 in AK.

Figure 2 shows distributions of the 2019 wage index by Census region for all rural and urban hospitals. The figure and accompanying data table show that, for each Census region, median wage index is lower for rural hospitals. It also shows that the lowest median hospital wage index is for rural hospitals in the South, and the highest median wage index is for urban hospitals in the West. Note the particularly large disparities in the South, Northeast, and Midwest, where approximately 75 percent of rural hospitals have a wage index below the 25th percentile for urban hospitals.

**Figure 2. 2019 Wage Index by Census Region, Rural and Urban Hospitals**

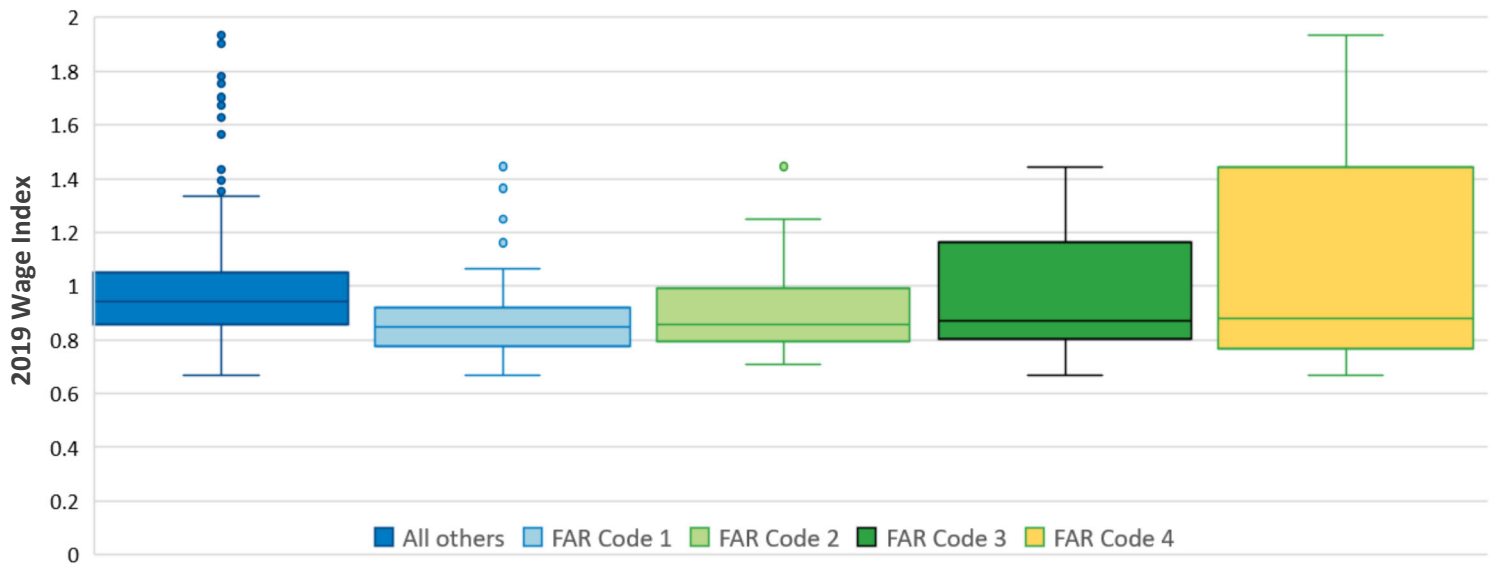


Census Region	Rural/Urban	Number of Hospitals	2019 Wage Index			
			Minimum	Median	Mean	Maximum
South	Rural	508	0.6699	0.8044	0.8140	1.4448
South	Urban	890	0.6699	0.8903	0.8912	1.4448
Northeast	Rural	95	0.7888	0.8798	0.9420	1.3535
Northeast	Urban	401	0.7888	1.1889	1.1487	1.3619
Midwest	Rural	249	0.7692	0.8889	0.9003	1.4448
Midwest	Urban	509	0.7914	0.9489	0.9577	1.1030
West	Rural	118	0.7806	1.0520	1.1432	1.9343
West	Urban	511	0.8582	1.2492	1.2542	1.9343

Note: Total number of hospitals for the figure and data table includes rural and urban hospitals with a 2019 wage index (3,332) excluding hospitals in Puerto Rico (51), which equals 3,281. Included in the data are Indian Health Service (IHS) hospitals, all of which have a 2019 wage index of 1.4448 (in AZ, MN, MS, MT, NM, NC, ND, OK, and SD) or a 2019 wage index of 1.9343 in AK.

Figure 3 shows the 2019 wage index by Frontier and Remote Area (FAR) codes for all rural and urban hospitals. FAR codes are used to categorize an area’s level of economic and social circumstances/conditions based on population size and remoteness. A FAR code of 4 is the most remote and least populated of the four codes. The figure and accompanying data table show that the lowest median hospital wage index is for FAR code 1 hospitals, and the highest median wage index is for “all other” hospitals (e.g., hospitals without a FAR code).

**Figure 3. 2019 Wage Index by FAR Code, Rural and Urban Hospitals**



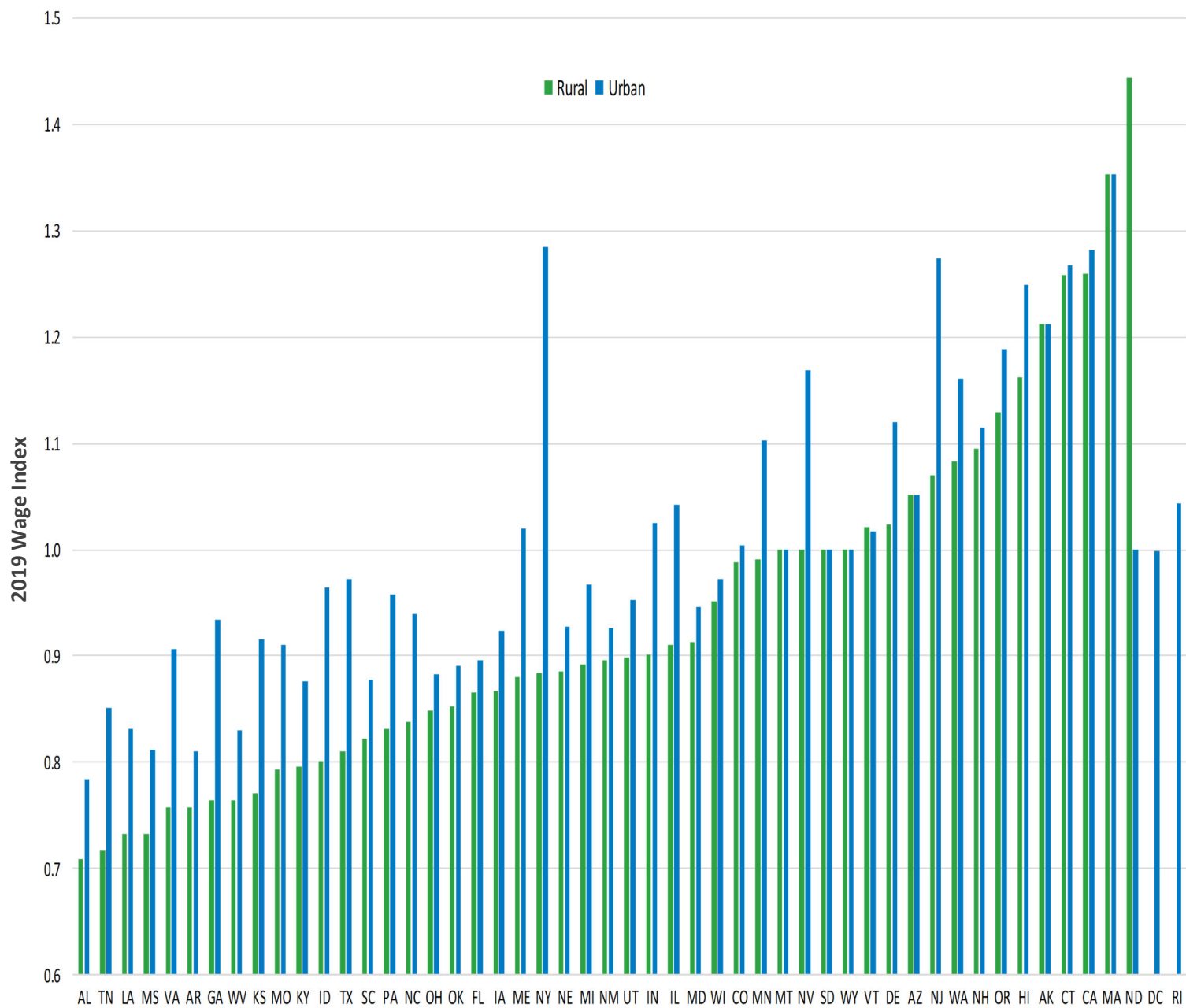
FAR Code	Number of Hospitals	2019 Wage Index			
		Minimum	Median	Mean	Maximum
All Others	3,068	0.6699	0.9410	0.9936	1.9343
FAR Code 1	91	0.6699	0.8479	0.8808	1.4448
FAR Code 2	67	0.7092	0.8585	0.9088	1.4448
FAR Code 3	40	0.6699	0.8690	0.9819	1.4448
FAR Code 4	15	0.6699	0.8798	1.0474	1.9343
Total	3,281	0.6699	0.9342	0.9888	1.9343

Note: Total number of hospitals for the figure and data table includes rural and urban hospitals with a 2019 wage index (3,332) excluding hospitals in Puerto Rico (51), which equals 3,281. Included in the data are Indian Health Service (IHS) hospitals, all of which have a 2019 wage index of 1.4448 (in AZ, MN, MS, MT, NM, NC, ND, OK, and SD) or a 2019 wage index of 1.9343 in AK.

Less than 20 percent of all ZIP codes have a non-zero FAR code assigned to them. There are four levels of frontier code, with higher levels indicating sparser population densities and increasing remoteness from urban areas. In this study, hospitals were classified by the highest frontier level assigned to the hospital’s ZIP code.

Figure 4 shows the 2019 median wage index by state for all rural and urban hospitals. The figure shows that, for all but eight states with rural hospitals, the median rural hospital wage index is less than the median urban hospital wage index.

Figure 4. Median 2019 Wage Index by State, Rural and Urban Hospitals

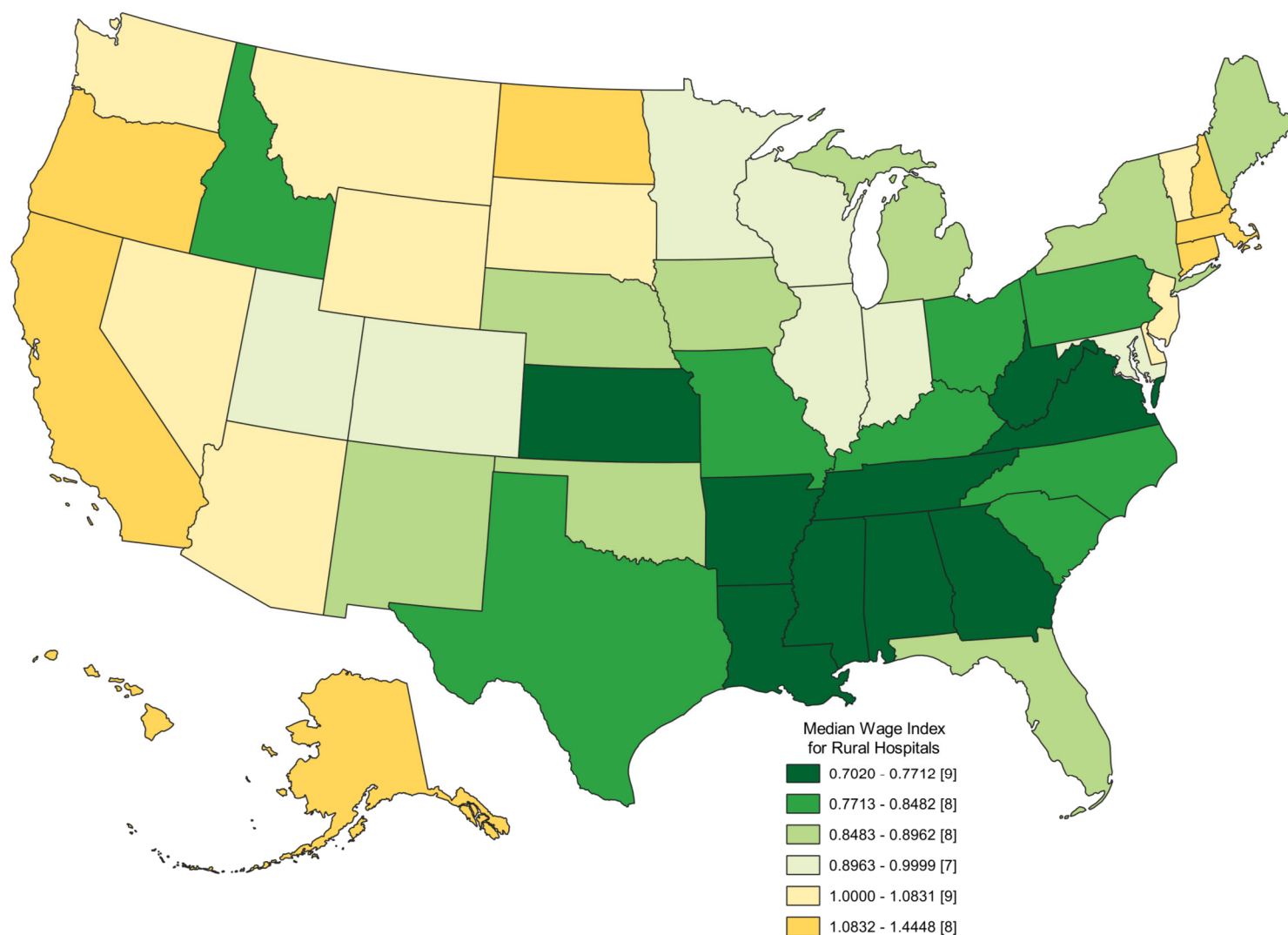


Note: Total number of hospitals for the figure includes rural and urban hospitals with a 2019 wage index (3,332) excluding hospitals in Puerto Rico (51), which equals 3,281. Included in the data are Indian Health Service (IHS) hospitals, all of which have a 2019 wage index of 1.4448 (in AZ, MN, MS, MT, NM, NC, ND, OK, and SD) or a 2019 wage index of 1.9343 in AK. States are ordered from lowest to highest median rural hospital wage index. See appendix for a list of state rural and urban medians.



Figure 5 maps the median 2019 rural hospital wage index by state. The map below shows that states with the lowest median rural hospital index are primarily in the Southern and Appalachian regions.<sup>13</sup> Nine states have a median rural hospital wage index below 0.7713 (Alabama, Tennessee, Louisiana, Mississippi, Virginia, Arkansas, Georgia, West Virginia, Kansas).

**Figure 5. 2019 Rural Hospital Wage Index Medians**



Source: Healthcare Cost Report Information System (HCRIS) data file for Hospitals for the 4th Quarter of 2018, CMS, 2019

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Note: Total number of hospitals for the map includes rural and urban hospitals with a 2019 wage index (3,332) excluding hospitals in Puerto Rico (51), which equals 3,281. Included in the data are Indian Health Service (IHS) hospitals, all of which have a 2019 wage index of 1.4448 (in AZ, MN, MS, MT, NM, NC, ND, OK, and SD) or a 2019 wage index of 1.9343 in AK. States are mapped from lowest to highest median rural hospital wage index.

## DISCUSSION

This study found substantial geographic variation in the hospital wage index of rural and urban hospitals: 1) the median 2019 rural hospital wage index is 0.1251 less than the median urban hospital wage index; 2) for each Census region, the median wage index is lower for rural hospitals than for urban hospitals; 3) the lowest median hospital wage index is for rural hospitals in the South, and the highest median wage index is for urban hospitals in the West, 4) the lowest median hospital wage index is for FAR code 1 hospitals, and the highest median wage index is for all other hospitals (without a FAR code), and; 5) among the 20 states with the lowest median hospital wage indexes, 14 states are in the South.

How the hospital wage index impacts the rural hospital profitability and financial sustainability is important as local, state, and federal policies aimed at supporting hospitals in rural areas are considered. Nationally, urban hospitals are twice as profitable as rural hospitals, and the greatest number of unprofitable hospitals are in the South where we see the lowest wage indices.<sup>14</sup> Exploring how the hospital wage index may have disproportionate impacts on rural hospital profitability is important as policy makers consider proposed and new changes.

## REFERENCES AND NOTES

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  - Level 1—FAR areas consist of rural areas and urban areas up to 50,000 people that are 60 minutes or more from an urban area of 50,000 or more people.
  - Level 2—FAR areas consist of rural areas and urban areas up to 25,000 people that are: 45 minutes or more from an urban area of 25,000-49,999 people; and 60 minutes or more from an urban area of 50,000 or more people.
  - Level 3—FAR areas consist of rural areas and urban areas up to 10,000 people that are: 30 minutes or more from an urban area of 10,000-24,999; 45 minutes or more from an urban area of 25,000-49,999 people; and 60 minutes or more from an urban area of 50,000 or more people.
  - Level 4—FAR areas consist of rural areas that are: 15 minutes or more from an urban area of 2,500-9,999 people; 30 minutes or more from an urban area of 10,000-24,999 people; 45 minutes or more from an urban area of 25,000-49,999 people; and 60 minutes or more from an urban area of 50,000 or more people.
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12. The FORHP definition of rural area differs from the rural area definition and rural reclassification criteria used by CMS for payment purposes. See <https://www.hrsa.gov/rural-health/about-us/definition/index.html>.
13. The Appalachian Region includes all of West Virginia and parts of Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, and Virginia. <https://www.arc.gov/>.
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**APPENDIX**  
**2019 Rural and Urban Median Wage Index by State**

The table below shows that all but eight states have a rural median wage index below the urban median wage index. Of those eight, only North Dakota and Vermont have a rural hospital median wage index greater than the urban hospital median. The others have the same median wage index for both rural and urban hospitals. Of the 20 states with the lowest median rural hospital wage indices, 14 are Southern states.

State	RURAL		URBAN	
	Hospitals	Median Wage Index	Hospitals	Median Wage Index
AL	44	0.7083	40	0.7839
TN	43	0.7169	47	0.8512
LA	29	0.7320	61	0.8312
MS*	39	0.7322	21	0.8111
VA	23	0.7570	51	0.9058
AR	21	0.7573	24	0.8108
GA	43	0.7643	58	0.9342
WV	13	0.7644	16	0.8298
KS	27	0.7712	24	0.9158
MO	30	0.7937	42	0.9100
KY	45	0.7959	19	0.8763
ID	3	0.8013	11	0.9649
TX	83	0.8100	227	0.9730
SC	21	0.8217	33	0.8771
PA	35	0.8310	115	0.9578
NC*	39	0.8383	46	0.9392
OH	40	0.8482	90	0.8822
OK*	46	0.8528	38	0.8903
FL	12	0.8651	156	0.8961
IA	14	0.8673	20	0.9234
ME	9	0.8798	8	1.0197
NY	36	0.8844	113	1.2844
NE	8	0.8857	15	0.9274
MI	31	0.8921	63	0.9677
NM*	19	0.8962	11	0.9263
UT	8	0.8990	23	0.9520
IN	20	0.9008	65	1.0255
IL	26	0.9100	99	1.0420
MD	5	0.9135	42	0.9456

**APPENDIX (continued)**  
**2019 Rural and Urban Median Wage Index by State**

State	RURAL		URBAN	
	Hospitals	Median Wage Index	Hospitals	Median Wage Index
WI	19	0.9519	47	0.9728
MT*	8	1.0000	6	1.0000
NV*	1	1.0000	21	1.1681
SD*	12	1.0000	8	1.0000
WY	7	1.0000	3	1.0000
VT	5	1.0211	1	1.0167
DE	2	1.0244	4	1.1199
AZ*	13	1.0520	50	1.0520
NJ	1	1.0705	63	1.2737
WA	6	1.0831	42	1.1604
NH	4	1.0948	9	1.1151
OR	8	1.1290	26	1.1880
HI	4	1.1617	8	1.2492
AK*	4	1.2120	4	1.2120
CT	3	1.2583	27	1.2675
CA	25	1.2593	272	1.2817
MA	2	1.3535	54	1.3535
ND*	3	1.4448	5	1.0000
DC	0	.	7	0.9990
RI	0	.	11	1.0437
<b>Total</b>	<b>970</b>	<b>0.8479</b>	<b>2,311</b>	<b>0.9730</b>

\*Includes Indian Health Service (IHS) hospitals, all of which have a 2019 wage index of 1.4448 (in AZ, MN, MS, MT, NM, NC, ND, OK, and SD) or a 2019 wage index of 1.9343 in AK.

Note: Total number of hospitals for the table include rural and urban hospitals with a 2019 wage index (3,332) excluding hospitals in Puerto Rico (51), which equals 3,281.

*This study was supported by the Federal Office of Rural Health Policy (FORHP), Health Resources and Services Administration (HRSA), U.S. Department of Health and Human Services (HHS) under cooperative agreement # U1GRH07633. The information, conclusions and opinions expressed in this brief are those of the authors and no endorsement by FORHP, HRSA, HHS, or The University of North Carolina is intended or should be inferred.*



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