NC RHRP

Findings Brief
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2019 Wage Index Differences and Selected Characteristics of Rural and Urban Hospitals

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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 among labor markets, which the Centers for Medicare & Medicaid Services (CMS) implemented through the wage index system. CMS also uses the hospital wage index for the Outpatient Prospective Payment System (OPPS), Skilled Nursing Facilities, Inpatient Rehabilitation Facilities, and other providers, but not Critical Access Hospitals which are exempt because they are not paid under IPPS. To compute 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. The wage index is revised each year based on wage data reported in Medicare Cost Reports by IPPS hospitals.

Figure 1 depicts how the wage index is used in calculation of the operating base payment rate as part of the acute IPPS for fiscal year 2019. The figure shows that Medicare's operating base payment rates are adjusted by a wage index to reflect the expected differences in local market prices for labor.

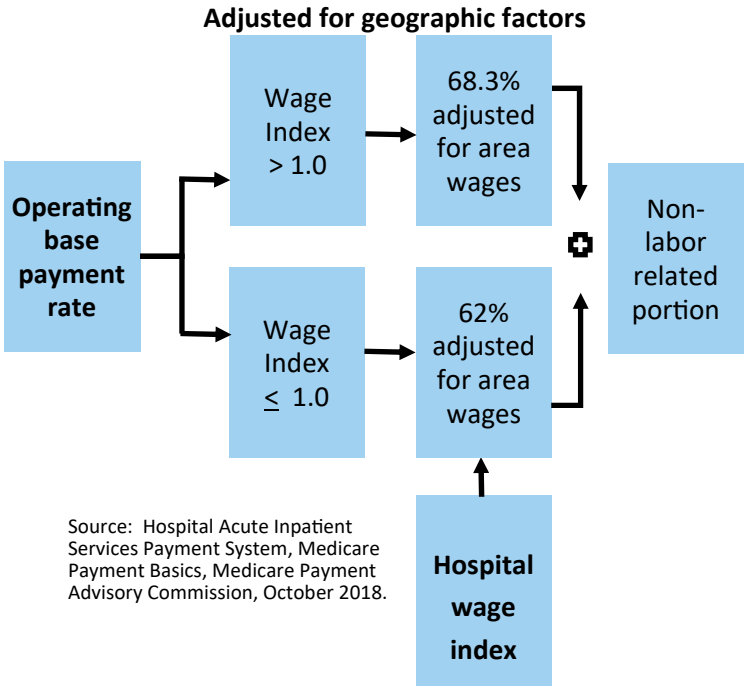
The wage index alters the labor-related portion of the base rate (usually called the "labor share"), which reflects an estimate of the portion of costs affected by local wage rates and fringe benefits. CMS's current operating labor share estimate of 68.3 percent is applied to hospitals with a wage index above 1.0, that is, "expensive" labor markets. Congress has legislated an operating labor share of 62 percent for hospitals located in areas with a wage index less than or equal to 1.0, that is, those areas with below-average wages.

The financial incentives to hospitals are readily apparent from the figure—higher wage indices increase the Medicare reimbursement. Labor costs are significant for hospitals, and a higher wage index translates directly into higher Medicare reimbursement. Additionally, CMS uses the wage index to adjust each capital base payment.[1] Specifically, the capital base payment is multiplied by a "geographic adjustment factor," which is the local wage index raised to the power of 0.6848 (42 CFR § 412.316).

KEY FINDINGS

- Small rural hospitals have the lowest hospital wage indices in the nation, and the highest wage indices are found among urban hospitals. The median wage index is lowest for rural hospitals with 25 or fewer beds and less than $25 million in net patient revenue, and highest for urban hospitals.
- There is substantial variation in the wage index among hospitals with different Medicare payment classifications. The median wage index is lowest for rural Medicare Dependent Hospitals (MDHs) and highest for rural Indian Health Service (IHS) hospitals.
- Rural hospitals have significantly lower wage indices than urban hospitals. When controlling for number of beds, net patient revenue, Medicare payment classification, average daily census, and percent Medicare patients, rural hospitals have a wage index that is, on average, 0.1261 points less than urban hospitals.

Figure 1. CMS Hospital Wage Index Calculation



In a companion findings brief, we describe some of the issues with the wage index and rural hospitals.[2] On April 23, 2019, CMS released its annual proposed update for the hospital IPPS for fiscal year 2020 that starts in October 2019.[3] In the proposed update, CMS recognizes that there are disparities within 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." CMS also proposes removing the urban to rural hospital reclassifications for calculating the rural floor wage index value starting in fiscal year 2020. To mitigate payment decreases due to these proposals, CMS proposes a 5-percent cap on any decrease in a hospital's wage index from its final wage index for fiscal year 2019.[4]

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."[5] **The purpose of this study is to characterize the wage index disparities by describing and comparing the wage indices of rural and urban hospitals by the number of beds, the amount of net patient revenue, and Medicare payment classification.**

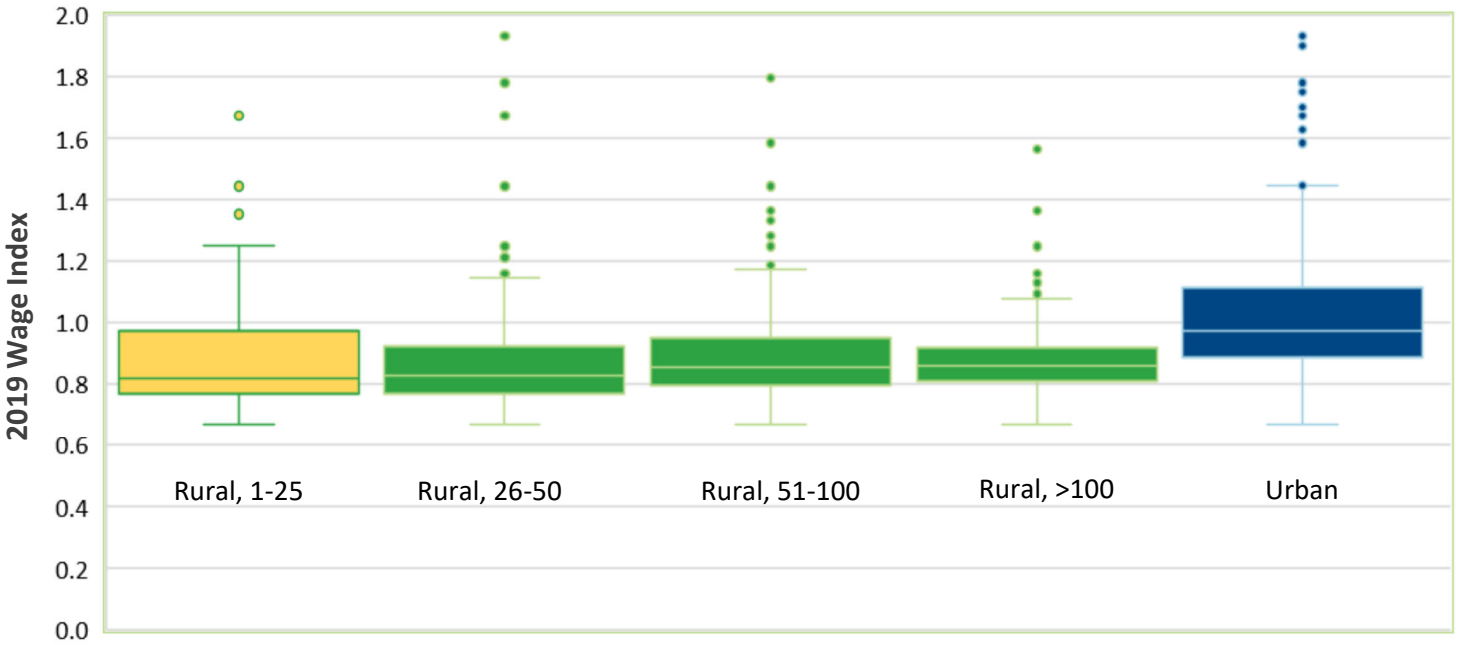
METHOD

Wage index values for facilities with acute care beds were obtained from the Impact Analysis from CMS Inpatient PPS fiscal year 2019 Final Rules.[6] Hospital financial information was obtained from the Hospital Cost Report Information System (September 30, 2018). Facilities were classified as rural using the definition of the Federal Office of Rural Health Policy (FORHP).[7] Facilities in Puerto Rico were excluded because of data limitations. Simple multiple regression was used to analyze the relationship between wage index and rural / urban location, number of beds, net patient revenue, Medicare payment classification, average daily census, and percent Medicare patients.

RESULTS

Figure 2 shows the 2019 wage index by number of acute beds. The figure and accompanying data table show that: 1) among rural hospitals, the median wage index consistently increases with the number of beds, from 0.8184 for 1-25 bed hospitals up to 0.8582 for hospitals > 100 beds, and; 2) the median wage index for urban hospitals (0.9730) is substantially higher than the median wage index for rural hospitals of any bed size.

Figure 2. 2019 Wage Index by Number of Beds

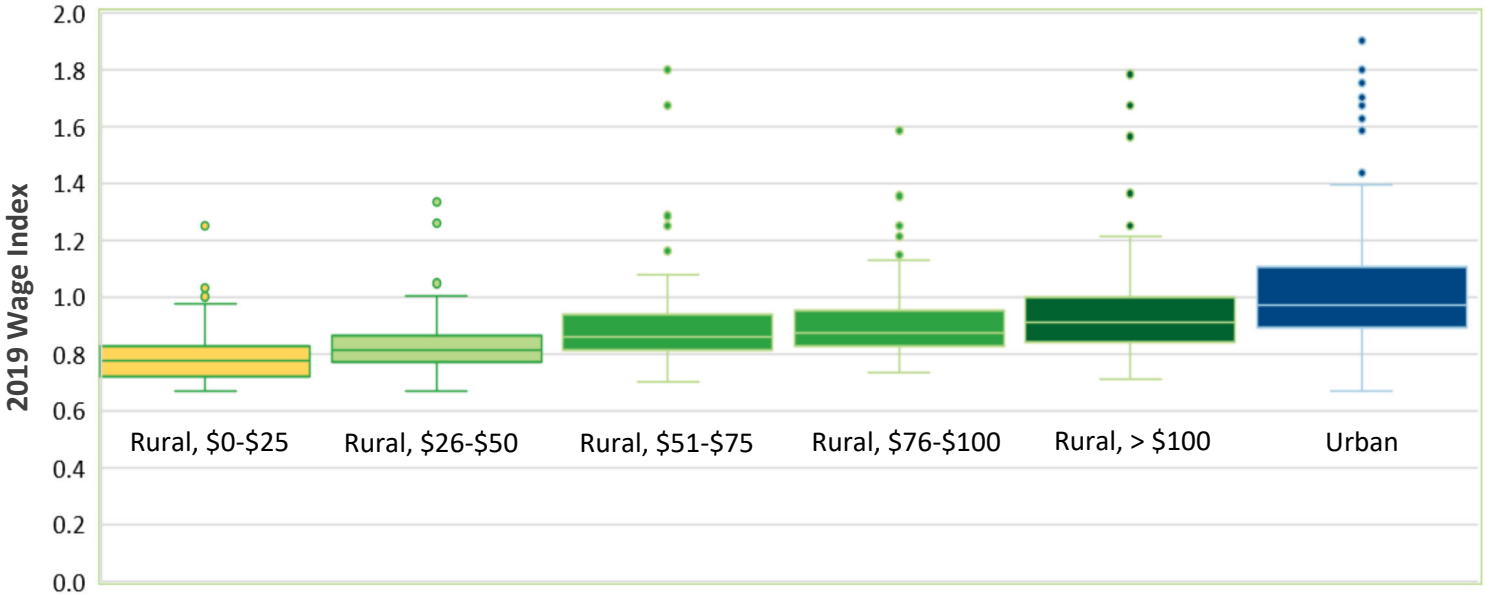


Number of Beds	Number of Hospitals	2019 Wage Index Descriptive Statistics			
		Minimum	Median	Mean	Maximum
Rural 1-25	75	0.6699	0.8184	0.9213	1.6726
Rural 26-50	339	0.6699	0.8283	0.8753	1.9343
Rural 51-100	327	0.6699	0.8571	0.9013	1.7972
Rural > 100	229	0.6699	0.8582	0.8801	1.5850
Urban (1-1,942)	2,311	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 include 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 net patient revenue. The figure and accompanying data table show that: 1) among rural hospitals, the median wage index consistently increases with net patient revenue, from 0.7761 for hospitals with less than $25 million in net patient revenue up to 0.9074 for hospitals with greater than $100 million in net patient revenue, and; 2) the median wage index for urban hospitals (0.9720) is substantially higher than the median wage index for rural hospitals of any net patient revenue.

Figure 3. 2019 Wage Index by Net Patient Revenue ($ millions)

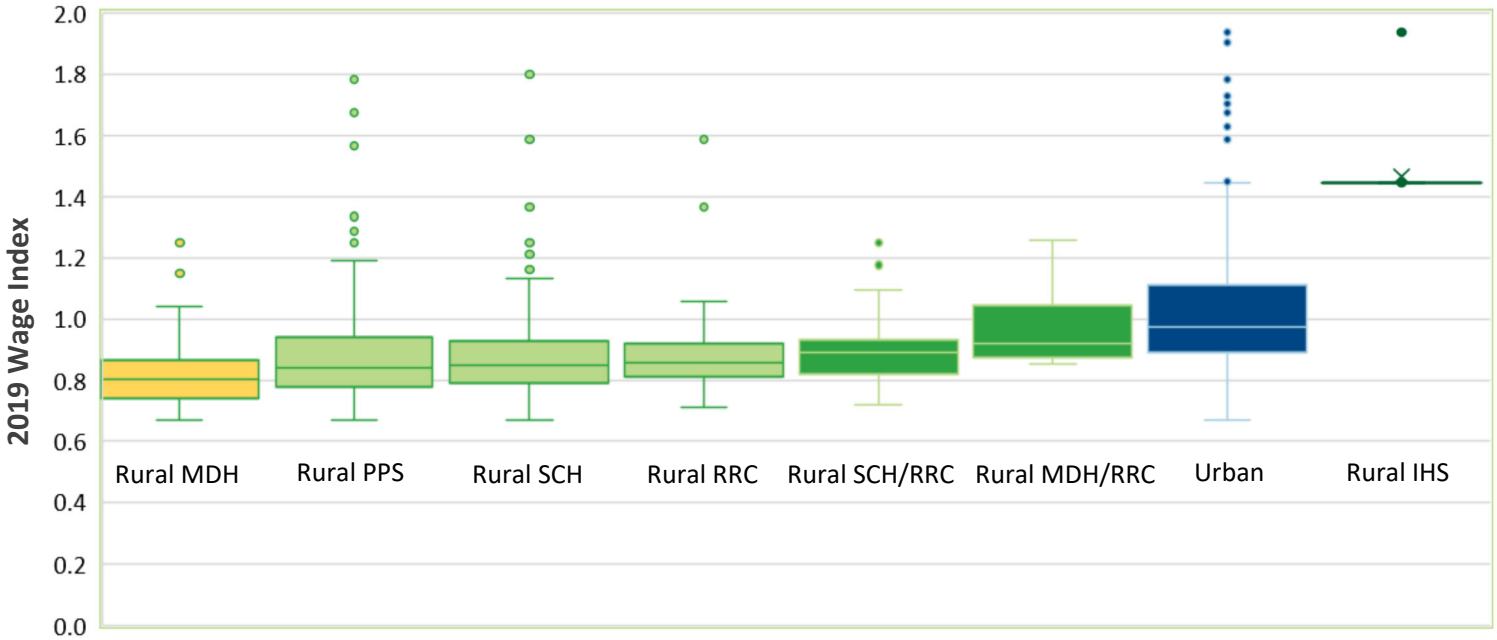


Net Patient Revenue ($ millions)	Number of Hospitals	2019 Wage Index Descriptive Statistics			
		Minimum	Median	Mean	Maximum
Rural $0-$25	206	0.6699	0.7761	0.7910	1.2492
Rural $26-$50	178	0.6699	0.8100	0.8276	1.3535
Rural $51-75	159	0.7020	0.8582	0.8939	1.7972
Rural $76-$100	139	0.7308	0.8724	0.9072	1.5850
Rural > $100	255	0.7095	0.9074	0.9427	1.7814
Urban	2,254	0.6699	0.9720	1.0237	1.9011
Total	3,191	0.6699	0.9291	0.9797	1.9011

Note: Total number of hospitals for the figure and data table include rural and urban hospitals with a 2019 wage index (3,332) minus hospitals in Puerto Rico (51), excluding hospitals with missing data (90), which equals 3,191.

Figure 4 shows the 2019 wage index by Medicare payment classification, sorted in ascending order—Medicare Dependent Hospital (MDH), Prospective Payment System (PPS), Sole Community Hospital (SCH), Rural Referral Center (RRC), Sole Community Hospital/Rural Referral Center (SCH/RRC), Medicare Dependent Hospital/Rural Referral Center (MDH/RRC), urban hospitals, and Indian Health Service (IHS). The figure and accompanying data table show that: 1) among rural hospitals, the median wage index varies with Medicare payment classification, from 0.8042 for MDHs up to 0.9187 for MDH/RRCs, and; 2) the median wage index for urban hospitals (0.9730) is substantially higher than the median wage index for all rural hospitals regardless of Medicare payment classification (except rural IHS hospitals).

Figure 4. 2019 Wage Index by Medicare Payment Classification



Payment Classification	Number of Hospitals	2019 Wage Index Descriptive Statistics			
		Minimum	Median	Mean	Maximum
Rural MDH	135	0.6699	0.8042	0.8181	1.2492
Rural PPS	314	0.6699	0.8407	0.8773	1.7814
Rural SCH	273	0.6699	0.8463	0.8793	1.7972
Rural RRC	100	0.7095	0.8568	0.8769	1.5850
Rural SCH/RRC	110	0.7192	0.8881	0.9025	1.2737
Rural MDH/RRC	13	0.8531	0.9187	0.9640	1.2565
Urban	2,311	0.6699	0.9730	1.0309	1.9343
Rural IHS	25	1.4448	1.4448	1.4644	1.9343
Total	3,281	0.6699	0.9342	0.9888	1.9343

Note: Total number of hospitals for the figure and data table include 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.

Table 1 shows the results of the regression analysis of wage index and hospital financial characteristics. The table shows that rural hospitals have a wage index that is, on average, 0.1261 points less than urban hospitals, after controlling for number of beds, net patient revenue, Medicare payment designation, average daily census, and percent Medicare patients.

Table 1: 2019 Wage index and hospital characteristics

	Coefficients	St. Error	t Stat	P-Value
Intercept	1.0509	0.0119	88.5142	0.0000
Rural (Yes = 1)	-0.1261	0.0095	-13.2528	0.0000
Number of beds	-0.0001	0.0001	-1.0173	0.3091
Net patient revenue (millions)	0.0002	0.0000	12.0201	0.0000
Medicare payment classification (Yes = 1)	-0.0265	0.0093	-2.8550	0.0043
Average daily census	-0.0004	0.0001	-3.5756	0.0004
Percent Medicare	-0.0764	0.0266	-2.8674	0.0042

Note: Total number of hospitals for the table are rural and urban hospitals with a 2019 wage index (3,332) minus hospitals in Puerto Rico (51), minus hospitals with missing data (99), which equals 3,182.

DISCUSSION

The purpose of this study is to describe and compare the wage indices of rural and urban hospitals by selected financial characteristics. There are three primary findings from the study: first, *the wage index is lowest among small rural hospitals and highest among urban hospitals.* The median wage index is lowest for rural hospitals with 25 or fewer beds and less than $25 million in net patient revenue, and highest for urban hospitals. Second, *there is substantial variation in the wage index among hospitals with different Medicare payment classifications*. The median wage index is lowest for rural Medicare Dependent Hospitals (MDHs) and highest for rural Indian Health Service (IHS) hospitals. Finally, after controlling for hospital characteristics, *rural hospitals have significantly lower wage indices than urban hospitals*. Controlling for number of beds, net patient revenue, Medicare payment designation, average daily census, and percent Medicare patients, rural hospitals have a wage index that is, on average, 0.1261 points less than urban hospitals.

The importance of the wage index in determining Medicare reimbursement is one reason why many hospital reimbursement staff are in a continuous cycle of reviewing their wage index and exploring the possibility of reclassification and other adjustments that would benefit a hospital.[8] Even small differences in the wage index can have a significant financial impact on rural hospitals in many states.[9] In a recent article, CMS Administrator Seema Verma was quoted as saying that "Hospitals have told the CMS that the wage index disparities between high- and low-wage areas are vast, particularly for rural hospitals or ones that are financially struggling. This has made improving the current system a priority."[10] The results of this study suggest that this priority is particularly warranted for rural hospitals.

REFERENCES AND NOTES

1. CMS sets operating and capital per discharge base rates (known as standardized payment amounts). Operating payments are tied to labor and supply costs; capital payments are tied to costs for depreciation, interest, rent, and property-related insurance and taxes. For fiscal year 2019, the operating base rate is $5,646. The capital rate is $459. MedPAC Payment Basics, Hospital Acute Inpatient Services Payment System, October 2018. Available at: http://www.medpac.gov/docs/default-source/payment-basics/medpac_payment_basics_18_hospital_final_v2_sec.pdf?sfvrsn=0.
2. Thompson KW, Howard HA, Pink GH. Geographic Variation in the Hospital Wage Index of Rural and Urban Hospitals, NC Rural Health Research Program, May 2019.
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5. Centers for Medicare & Medicaid Services Fact Sheet, Fiscal Year (FY) 2020 Medicare Hospital Inpatient Prospective Payment System (IPPS) and Long Term Acute Care Hospital (LTCH) Prospective Payment System Proposed Rule and Request for Information, April 23 2019. Available at: https://www.cms.gov/newsroom/fact-sheets/fiscal-year-fy-2020-medicare-hospital-inpatient-prospective-payment-system-ipps-and-long-term-acute.
6. The CMS Impact File includes all facilities with a wage index and paid using the IPPS. In addition to acute care hospitals, the list of facilities includes a small number of Long Term Care Hospitals, mental health centers, and other facilities that have small acute inpatient units. These facilities are included in the data because they: have a wage index and are paid using the IPPS for the acute care provided to Medicare patients.
7. 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.
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