The Effect of Medicare Payment Standardization Methods on the Perceived Cost of Post-Acute Swing Bed Care in Critical Access Hospitals

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Preface: The Centers for Medicare & Medicare (CMS) Standardization Methodology for Allowed Amount – v.10 (p.5) (the "Methodology")[1] states, "the purpose of payment standardization is to facilitate the measurement and meaningful comparison of resource use for services covered by Centers for Medicare and Medicaid [sic] (CMS) across provider types and geographic areas." This is accomplished by "standardizing" payments, or removing geographic adjustments and other payment factors that are not related to the care provided. The Methodology further states that "…the goal of standardization is to allow for resource use comparisons across the country on an equal basis…" (p.7). This suggests that payment standardization should consider payments for similar services to be equivalent. Importantly, CMS uses standardized payments to compare resource use within different Medicare value-based purchasing programs; however, the calculated standardized values do not directly alter the payments made by CMS and patients for the care.

OVERVIEW

The swing bed program was authorized by Congress in the early 1980s. Designed to respond to declining inpatient volume and long-term care in rural communities, swing beds allow small rural and critical access hospitals (CAHs) to use their beds for either inpatient care or skilled nursing services as needed.[2,3] Many CAHs have come to rely on swing beds to manage patients and staffing and to help ensure financial stability of their organizations.[3] For instance, approximately 92% of CAHs provide care in swing beds, and for some rural communities, swing beds are the only source of post-acute care.[4]

Currently, CMS uses different payment systems to reimburse post-acute care provided in CAH swing beds versus prospective payment system (PPS) hospital swing beds or skilled nursing facilities (SNFs). This results in differential payments for theoretically similar care. Current CMS payment standardization methods perpetuate these differences across settings. Importantly, CMS faced data limitations in developing a payment standardization method for CAH swing bed care since CAH swing bed claims do not include the patient assessment information (e.g., measures of patient characteristics and service use) that is included with SNF claims and used to adjust SNF claims for case mix. Furthermore, while standardized payments do not directly affect reimbursement, they are important because the standardized payment amounts are

KEY FINDINGS

♦ Although Critical Access Hospital (CAH) swing-bed providers and skilled nursing facilities (SNFs) both provide post-acute skilled nursing care services, the methods currently used by CMS to standardize payments in the two settings differ. This contrasts with the CMS payment standardization methods used for acute inpatient payments and hospital outpatient payments, which treat all hospitals the same regardless of special payment designations.

♦ Using CMS's current CAH swing bed payment standardization method, standardized swing bed allowed amounts per day and per claim are generally higher than actual swing bed allowed amounts. Further, standardized swing bed allowed amounts are generally three-to-five times greater than what they would be if CMS's SNF payment standardization method were applied to swing bed payments. **If CAH swing bed providers and SNFs provide similar services, this result appears counter to the stated purpose of payment standardization, which should remove the effects of payment differences across similar settings.**

♦ The differences between standardized and actual swing bed allowed amounts per day and per claim are greatest among hospitals in the South and Midwest census regions and among beneficiaries who are Black as compared to other races and ethnicities. At the claim level, differences increase as swing bed volume increases.

♦ An estimate of the "typical" standardized allowed amount per day of swing bed care using the CAH swing bed method is $1,910. This compares to an estimated typical actual allowed amount per day of $1,676 and a simulated range of standardized allowed amounts of $358 to $609 per day using the CMS SNF standardization method.

incorporated into resource use-related performance measures under different value-based purchasing programs in Medicare.[5] These performance measures often assess total resource use of care provided in acute and post-acute settings. Doing so allows CMS to measure the overall efficiency of resource use and encourage coordination among fee-for-service providers across Medicare.

What is Payment Standardization?

Payment standardization is the process of "undoing" the effects of geographic and facility-specific adjustments, such as the wage index, that are built into the Medicare payment system.[1] For example, if exactly the same care in the same setting was provided to two different patients in different parts of the country (one where labor costs are relatively low and another where labor costs are relatively high), standardized Medicare payments for each patient's care would be the same even though actual payments would differ. In contrast, if one patient received inpatient knee surgery while another received outpatient knee surgery, standardized payments would remove the geographic price differentials (e.g., the differences in price arising from the cost of labor), but preserve resource use differences arising from the choice of setting (e.g., inpatient versus outpatient). In this way, **standardized payments remove the effects of price variation and special payment provisions or add-ons so the utilization of resources can be compared to better understand variations in efficiency and practice patterns.**

Why is it Important to Understand the Impact of Payment Standardization Methods?

Standardized payments are used to compare Medicare resource use across locations and settings. One of an expanding number of uses for standardized payments is in the assessment of efficiency and effectiveness of resource use in the Hospital Value-Based Purchasing (VBP) Program. Hospital VBP is a CMS initiative that rewards Inpatient Prospective Payment System (IPPS) acute-care hospitals with incentive payments for providing high-quality, cost-efficient care to Medicare beneficiaries.[6] Under the Hospital VBP program, hospitals receive a Total Performance Score that is used to adjust (upward or downward) the DRG payments they receive under the IPPS. The Total Performance Score is calculated as the weighted average of scores received in four domains: safety (25%), clinical care (25%), person and community engagement (25%), and efficiency and cost reduction (25%). The measure used to assess the efficiency and cost reduction domain is Medicare Spending per Beneficiary (MSPB).[6]

The MSPB measure[7] evaluates a hospital's efficiency relative to the efficiency of the national median hospital during an MSPB "episode."[8] Importantly, an MSPB episode is defined by three periods: (1) the three days immediately prior to a patient's hospital stay, (2) the period during the stay, and (3) the 30 days following the hospital stay.[8] Thus, a hospital's performance on the MSPB measure is affected not only by the care it provides during the stay, but also by the care a beneficiary receives from other providers during the periods preceding and following the hospital stay. Approximately one quarter of Medicare-covered hospital stays are followed by a post-acute stay, such as for rehabilitation in a SNF or a swing bed.[9] In rural areas, CAH swing beds provide an important source of post-acute care for rural residents.[4] **Although CAHs are not currently participating in the Hospital VBP program, standardized, risk-adjusted allowed spending from swing bed or SNF providers would be included in a discharging IPPS hospital's MSPB measure if incurred in the 30 days after discharge.**

Before standardization methods are applied, the per diem Medicare payment for an average day of CAH swing bed care is greater than the per diem payment for an average day of SNF care or swing bed care provided in an IPPS hospital. This is because CAHs receive cost-based reimbursement from Medicare for swing and acute days while SNFs and IPPS hospital swing beds are paid under the SNF prospective payment system.[10] Currently, CMS uses different methods to standardize post-acute payments made to CAH swing bed providers versus SNFs and IPPS hospital swing beds. These methods do not remove the effects of special payment provisions (e.g., cost-based reimbursement). This is in contrast to methods used to standardize acute inpatient and hospital outpatient payments that treat all hospitals the same, regardless of payment system, because they provide a "similar set of services"[1] (p.7). **Thus, differences in the payment standardization methods used for CAHs, IPPS hospital swing beds, and SNFs may influence post-acute care discharge patterns, and subsequently, access to post-acute care for rural residents.** Therefore, policy makers need to understand where existing payment formulas may inadvertently penalize rural providers. The purpose of this study is to describe the effects of current Medicare payment standardization methods on the perceived cost of CAH swing bed care as it relates to the MSPB measure.

STUDY DATA AND METHODS

Using 2016 Medicare CAH swing bed claims, we compare Medicare allowed amounts, standardized allowed amounts using CMS's CAH swing bed payment standardization method, and simulated standardized allowed amounts using the SNF PPS payment standardization method. Swing bed allowed charges and days of care were drawn from the 2016 Medicare skilled nursing facility research identifiable claims file.[11] The labor-related share and the Resource Utilization Group-Version 4 (RUG-IV) case mix-adjusted federal rates were obtained from the 2016 SNF PPS Final Rule.[12] The 2016 rural wage index was drawn from the SNF crosswalk on the CMS website.[13] Because of the nature of the data, medians are better descriptors than means. However, because median values may be based on a single claim, disclosure is not permitted by CMS. Therefore, we developed a measure we termed "meanian" that approximates the median values. Briefly, the meanian is calculated as the average of the 11 observations near the median (details in Appendix). This approach, while atypical, gives values that are very similar to the median but meet the disclosure rule imposed by the Data Use Agreement. All reported meanians are within 0.1% of the median values. The average difference between meanian and median is around 0.009%.

Using the process outlined in "CMS Standardization Methodology for Allowed Amount – v.10",[1] CAH swing bed allowed spending is standardized by removing the effects of the area wage index (i.e., dividing the expenditures by the area wage index; formula shown in Equation 1 below). Since rural wage indices are generally lower than urban wage indices, and most are less than one,[14] the general result is standardized allowed amounts that are greater than actual allowed amounts.

The standardized allowed amount using the CAH swing bed payment standardization method was calculated as shown in Equation 1 below:[1]

$$Standardized\ Allowed\ Amount = \frac{(Actual\ Payment\ +\ Coinsurance)}{[(SNF\ Labor\ Share\ *\ Wage\ Index)\ +\ (1\ -\ SNF\ Labor\ Share)]} \quad (Eq.\ 1)$$

In contrast, expenditures for SNFs paid under the SNF prospective payment system (SNF-PPS) are adjusted by multiplying the number of days of SNF care by the average of the standardized national urban and rural base resource utilization group (RUG) rates.[15] We simulated CAH swing bed standardized allowed amounts using the SNF PPS payment standardization method as shown in Equation 2 below.[1] Specifically, standardized allowed amounts using the SNF method were simulated by multiplying the number of swing bed days shown on each claim by a representative standardized RUG rate (i.e., average of urban and rural RUG base rates). We completed this calculation three separate times using a representative low cost, moderate cost, and high-cost RUG, respectively. The RUGs were chosen by examining the most common RUGs among rural SNFs using the Medicare Provider by RUG Aggregate Table for Calendar Year 2016.[16]

$$Standardized\ Amount = (Standardized\ RUG\ Rate)\ *\ Days \quad (Eq.\ 2)$$

RESULTS

Table 1 shows descriptive information on the study sample. In 2016, there were 93,904 CAH swing bed claims (with non-zero values for days and payment amount) from 1,258 CAHs.

Table 1. Descriptive Statistics

Number of CAH Swing Bed Claims	93,904
Number of Unique Beneficiaries	72,690
Number of CAHs Represented in Claims	1,258
Swing Bed Days per CAH, Median	561
CAH Location (Census Region), %	
Northeast	5.6
Midwest	47.6
South	26.8
West	20.0

Notes: CAH = Critical Access Hospital

Table 2 shows actual versus standardized allowed amounts per CAH swing bed day using the swing bed payment standardization method, where actual allowed amount is defined as the actual Medicare payment amount on the claim plus any coinsurance. The "meanian" standardized allowed amount of $1,910 per day is $234 greater than the meanian actual allowed per day of $1,676. The largest differences between standardized and actual allowed amounts per day are found among CAHs located in the Midwest and South census regions, among CAHs in the bottom two-thirds of swing bed volume, and among beneficiaries who are Black. Assuming a representative, low-cost standardized RUG rate of $358 per day of care,[13,16] the meanian standardized swing bed allowed amount per day is over five times greater than the average standardized rate for a day of care in a SNF ($1,910 versus $358; not shown in Table 2). Furthermore, the meanian standardized swing bed allowed amount per day is over three times greater than the average standardized SNF rate, assuming a representative, high-cost standardized RUG rate of $609 per day of care[13,16] ($1,910 versus $609; not shown in Table 2).

Table 2. Actual versus Standardized Allowed Amount per CAH Swing Bed Day

	Actual [a,b]	Standardized [b]	Difference [c]
Overall	$1,676	$1,910	$234
By CAH Location (Census Region)			
Northeast	$1,589	$1,735	$146
Midwest	$1,827	$2,084	$257
South	$1,363	$1,647	$284
West	$1,976	$2,044	$68
By Swing Bed Volume			
Bottom Tertile (375 or fewer days)	$2,182	$2,437	$255
Middle Tertile (376-827 days)	$1,878	$2,125	$247
Top Tertile (828-5,882 days)	$1,532	$1,753	$221
By Beneficiary Race/Ethnicity			
Asian	$1,532	$1,538	$6
Black	$1,365	$1,678	$313
Hispanic	$1,805	$1,992	$187
North American Native	$1,891	$2,114	$223
Other	$1,689	$1,885	$196
White	$1,682	$1,917	$235
Unknown	$1,694	$1,921	$227

Notes: CAH = Critical Access Hospital. [a] Includes coinsurance. [b] Meanian values shown, rounded to the nearest dollar. See Methods for a description of the calculation. [c] Calculated as Standardized Allowed Amount minus Actual Allowed Amount.

While Table 2 examines the cost per CAH swing bed <u>day</u>, Table 3 shows actual versus standardized allowed amounts per CAH swing bed <u>claim</u> (e.g., the total number of days a beneficiary was treated in a swing bed for that episode) using the swing bed payment standardization method. The meanian standardized allowed amount per claim of $15,066 is $1,828 greater than the meanian actual allowed amount per claim of $13,238. The differences between standardized and actual allowed amounts per claim are greatest among hospitals in the South and Midwest and among beneficiaries who are Black. At the claim level, differences increase as swing bed volume increases.

Table 3. Actual versus Standardized Allowed Amount per CAH Swing Bed Claim (Episode)

	Actual [a,b]	Standardized [b]	Difference [c]
Overall	$13,238	$15,066	$1,828
By CAH Location (Census Region)			
Northeast	$11,128	$12,131	$1,003
Midwest	$13,020	$14,790	$1,770
South	$13,280	$16,035	$2,755
West	$16,032	$16,223	$191
By Swing Bed Volume			
Bottom Tertile (375 or fewer days)	$13,210	$14,672	$1,462
Middle Tertile (376-827 days)	$12,873	$14,554	$1,681
Top Tertile (828-5,882 days)	$13,428	$15,398	$1,970
By Beneficiary Race/Ethnicity			
Asian	$16,269	$16,553	$284
Black	$14,936	$18,195	$3,259
Hispanic	$14,162	$15,110	$948
North American Native	$17,308	$18,936	$1,628
Other	$15,051	$16,224	$1,173
White	$13,124	$14,934	$1,810
Unknown	$13,747	$15,461	$1,714

Notes: CAH = Critical Access Hospital. [a] Includes coinsurance. [b] Meanian values shown, rounded to the nearest dollar. See Methods for a description of the calculation. [c] Calculated as Standardized Allowed Amount minus Actual Allowed Amount.

Figure 1 shows meanian actual versus standardized allowed amounts per swing bed claim using the swing bed method of payment standardization (see Equation 1 on page 3) and the simulated allowed amounts using the SNF method of payment standardization (see Equation 2 on page 3). The simulated standardized allowed amounts using the SNF method are calculated by multiplying the number of swing bed days on the claim by a representative low cost ($358 per day), moderate cost ($452 per day) and high-cost RUG ($609 per day), respectively.[13,16] The swing bed method of payment standardization results in a meanian swing bed allowed amount per claim of $15,066 compared to an actual allowed amount of $13,238, as shown above. Similar to the results in Table 2, the standardized payment for a swing bed claim of $15,066 is approximately three-to-five times greater than what the standardized allowed amount would be using the SNF method of standardization and assuming a low, moderate, or high-cost RUG ($2,867, $3,613 and $4,870 per claim, respectively). Because standardized payments are used to measure and evaluate resource use, **the current method of CAH swing bed payment standardization would increase the Medicare Spending per Beneficiary value for IPPS hospitals discharging patients to CAH swing beds more than if the same patients were discharged to SNFs or IPPS hospital swing beds (e.g., swing beds may be perceived by discharging hospitals to be more expensive than SNFs in the MSPB formula).**

Figure 1. Meanian Swing Bed Allowed Amounts Per Claim (Episode): Actual, Standardized Using the Swing Bed Standardization Method, and Simulated Using the SNF Standardization Method
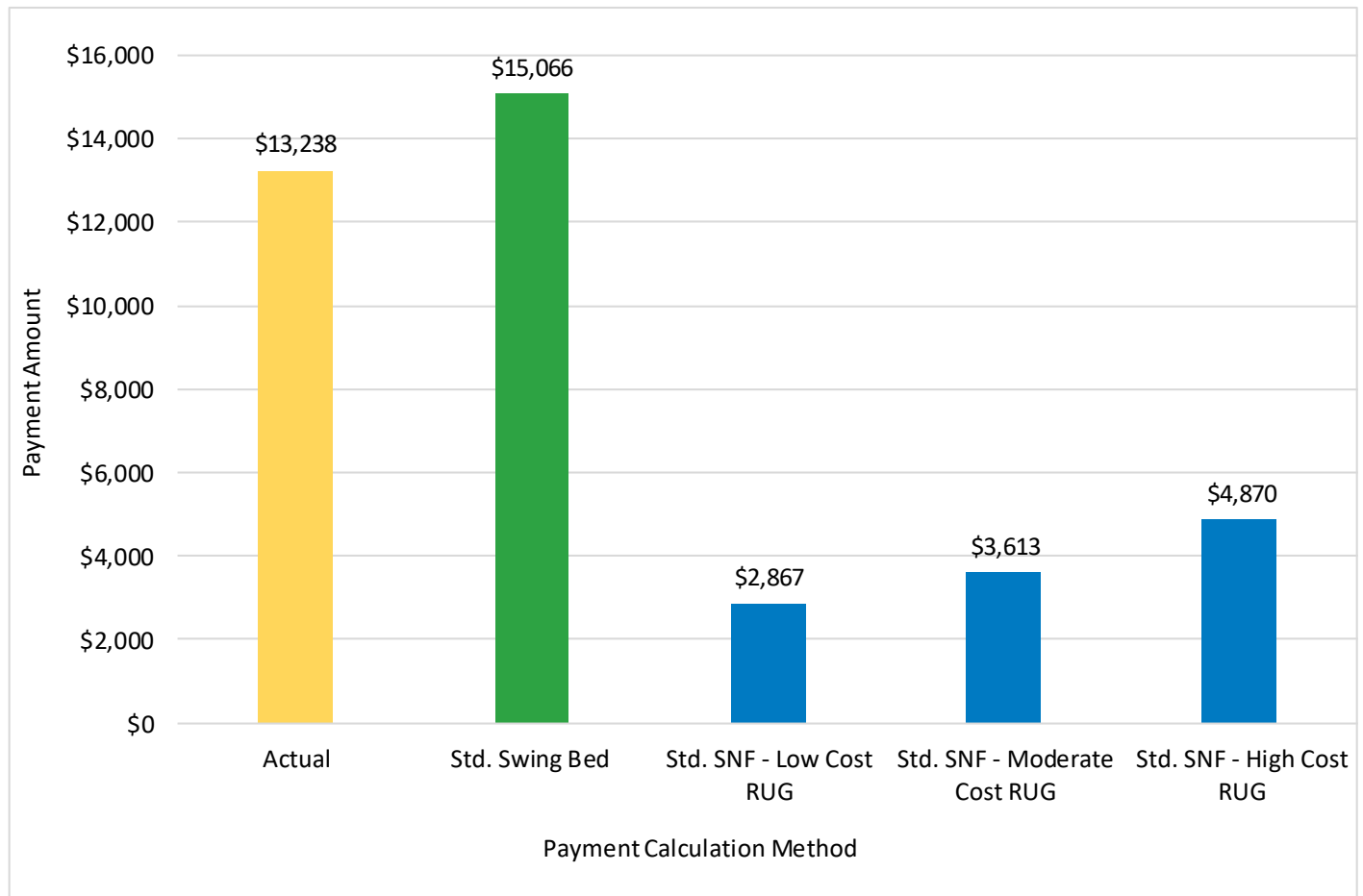
Notes: Std. = Standardized; SNF = Skilled Nursing Facility; RUG = Resource Utilization Group

DISCUSSION

Payment standardization is necessary for making accurate comparisons of resource use across settings and geography (e.g., inpatient versus outpatient; primary care versus specialty care; Minnesota versus Florida). However, our research suggests that the current, disparate methods for standardizing CAH swing bed payments versus SNF or IPPS hospital swing bed payments can create differences in the perceived cost to IPPS hospitals when Medicare patients use CAH swing bed providers for post-acute care as compared to SNFs or IPPS hospital swing beds. This contrasts with the methods currently used to standardize acute inpatient and hospital outpatient payments that treat all hospitals the same, regardless of payment system (i.e., these contrasting methods assume that hospitals provide essentially similar services). Due to data limitations, developing an appropriate method of standardizing CAH swing bed allowed amounts is challenging. However, it is important for the standardization formula to be as accurate as possible to reflect resource use in different payment systems and incentivize efficient patient care independent of payment system.

The CAH swing bed payment standardization method increases most standardized allowed amounts above actual allowed amounts. Mathematically, this occurs because the standardization method divides the total payments to the CAH by a weighted value of the wage index. Since rural wage indices are generally less than 1.0, this generally results in a standardized allowed amount that is greater than the actual allowed amount. Thus, **a day in a CAH swing bed would have a stronger negative impact on the referring or discharging IPPS hospital's MSPB measure than would a day in a SNF, a day in an IPPS hospital swing bed, or a day in a CAH swing bed if the actual (rather than the standardized) payment were used.** The effects appear greatest for CAHs in the South and Midwest, where rural wage indices are low and thus standardized payments are substantially higher than actual payments. Data also suggest greater effects among beneficiaries who are Black as compared to other races/ethnicities. Regional differences may be playing a role in this result; however, further research is needed to understand the causes of differences across racial and ethnic stratifications.

As a result of cost-based reimbursement, the per diem Medicare payments for CAH swing bed days are higher than the PPS rates applied to SNF or IPPS hospital swing bed days, even before any standardization method is applied. Our results show that **the difference in payment standardization methods between CAH swing beds and SNFs/IPPS hospital swing beds exacerbates this differential and might not reflect the true resource utilization required to provide swing bed care**. Previous research has estimated that the implied Medicare expenditure on a CAH swing bed day, excluding the acute care fixed costs that are distributed to swing bed days under the current CAH reimbursement formula, is roughly 45 percent of the per diem payment ($581 versus $1,302).[17] Applying this percentage to meanian swing bed allowed amounts (i.e., the total Medicare payment on the claim plus any coinsurance) per day and per claim would result in standardized amounts of approximately $754 per day and $5,957 per claim; still higher than the simulated standardized allowed amounts using the SNF PPS payment standardization method, but much closer than the standardized allowed amounts using the current CAH swing bed method.

Since CAHs are not required to report the information used to assign RUGs to swing bed patients, using the SNF standardization method would require assumptions about the health care resource needs of swing bed patients. With existing data, it is difficult to determine the extent to which beneficiaries and care provided in CAH swing beds are similar to or different from beneficiaries and care provided in SNFs. Thus, it is not possible to assess the extent to which use of the SNF PPS payment standardization methodology, or another alternative, for swing beds would be appropriate or would mask any actual differences in care related to setting (e.g., types of providers, clinical processes, systematic differences in level of need and/or illness of the patients). Still, as the use of the MSPB measure expands and the use of payment standardization grows in Medicare value-based purchasing more generally, policymakers may want to be aware of the effect of the current CAH swing bed payment standardization methodology. There could be a need to monitor post-acute discharge patterns and rural beneficiaries' ability to access post-acute care close to home.

ACKNOWLEDGEMENT

APPENDIX: MEANIAN DEFINITION

To calculate meanians, we find the median value and then calculate the average value of all observations meeting one of the following three criteria: 1) observations with the median value; 2) the five observations with values closest to the median that are also lower than the median; 3) the five observations with values closest to the median that are also greater than the median. As an example, if the median value occurred in five different observations, we would calculate the average value of the set containing those five observations, the five observations with values closest to the median that are also lower than the median, and the five observations with values closest to the median that are also greater than the median (i.e., the average value of 15 observations "centered" around the median).

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