

Milliman RBRVS for Hospitals



WHAT IS RBRVS FOR HOSPITALS?

The Milliman RBRVS for Hospitals™ Fee Schedule provides a simple solution for comparing hospital contractual allowed amounts, billed charge master levels, efficiency, and patient mix differences. The fee schedule is based on Relative Value Units (RVUs). The RVUs are the same for procedures that require the same relative resources.

ADVANTAGES OF RBRVS FOR HOSPITALS

- RVUs have been developed for all hospital services (inpatient and outpatient), so they reflect the relative resources required to perform the care.
- The concept is similar to Medicare's RBRVS physician fee schedule, in that a conversion factor provides a valid comparison even for widely different provider types and patient populations.
- A single conversion factor can be used to benchmark a hospital contract. Lengthy summaries of hospital contracts with medical/surgical per diems, maternity case rates, ICU per diems, outlier arrangements, and miscellaneous outpatient reimbursement structures are no longer necessary.
- Allows insurers and hospitals to benchmark and compare contractual reimbursement levels, efficiency, billed charge master levels, and benchmark patient mix differences.

DEVELOPING RBRVS FOR HOSPITALS RVUS

All inpatient and outpatient procedures are assigned RVUs. Procedures requiring the same level of resources have the same RVUs. Both the inpatient and outpatient RVUs are developed using Medicare payment rates, which are then converted to RVUs using

Medicare's RBRVS conversion factor. Therefore, inpatient and outpatient RVUs are directly comparable.

INPATIENT RVU DEVELOPMENT AND ADJUDICATION

Inpatient RVUs are developed at the most detailed level possible using data commonly available in administrative claims, resulting in a very refined patient severity adjustment

- RVUs are assigned per day, rather than per case. The RBRVS for Hospitals RVUs are comprised of Diagnosis Related Group (DRG) specific First Day and Additional Day RVUs. The First Day RVUs are an estimate of the resources required for the first day of each admission. DRG-specific Additional Day RVUs are assigned for each additional day of acute care. The Additional Day RVUs are an estimate of the resources required for each subsequent day of acute care.
- The Additional Day RVUs are lower than the First Day RVUs, reflecting lower resource use on the additional days. Thus, the RVU fee schedule adjusts for differences in length of stay and patient mix among hospitals. As a result, hospital specific average inpatient conversion factors developed using the RVUs provide a direct comparison of historic or projected fee levels for different hospitals, even if the fee schedules for each hospital are structured differently.
- Using Medicare's average length of stay, the Milliman RVUs and the Medicare RBRVS conversion factor will produce payments that are similar to Medicare's case rates, as demonstrated in Table A.
- For more refined risk adjustment, Milliman has developed RVUs for inpatient services based on APR-DRGs at each severity level within the APR-DRG system (1,266 DRGs/severity levels versus

TABLE A

INPATIENT EXAMPLE #1
FY 2010 MEDICARE RELATIVE WEIGHTS TO MILLIMAN RBRVS FOR HOSPITALS RVUS (V2010.0)
COMPARISON FOR DRG 069 – TRANSIENT ISCHEMIA

MEDICARE (FY 2010)		MILLIMAN RBRVS (V2010.0) – MS DRG	
RELATIVE WEIGHT	0.7289	INITIAL DAY RVU	66.848
CONVERSION FACTOR (NATIONWIDE)	\$5,652.40	ADDITIONAL DAY RVU	24.490
CASE PAYMENT	\$4,120.03	MEDICARE ALOS	2.933
		TOTAL RVUS FOR ALOS	114.187
		RBRVS CONVERSION FACTOR	\$36.0846
		AVERAGE CASE PAYMENT	\$4,120.40

746 MS DRGs). In Table B, we provide a comparison of the MS-DRG RVUs to the APR-DRG RVUs.

The RVUs for any inpatient admission are calculated as:

$$(First\ Day\ RVUs + (Additional\ Day\ RVUs))$$

Note that "Additional Days" includes all days after day 1.

RVUs can be assigned to claims on either a per case or a per day basis. The formula above illustrates the calculation of RVUs using a "per day" approach and incorporates the LOS in estimating the resources used to treat a patient. Alternatively, Case RVUs represent the average resources used for the given service independent of LOS.

Case RVUs are created to be consistent with the characteristics of the population to be measured. For example, resource consumption for a given APR-DRG may differ between commercial and Medicare populations, or potentially between populations in different geographic areas based on LOS management. Milliman develops population-specific case-based RVUs by setting average LOS assumptions using client and/or benchmark data combined with actuarial judgment.

With RVUs assigned on both a per day and per case basis, a LOS efficiency measure can be calculated as:

$$\frac{RVUs\ on\ a\ per\ day\ basis}{RVUs\ on\ a\ per\ case\ basis}$$

Using this method of comparison, a ratio of 1.0 indicates average efficiency. Values lower than 1.0 indicates better than average efficiency, as the hospital required fewer RVUs than average to deliver its mix of services.

Table C shows an example of the implied efficiency for a sample discharge using APR-DRG 047 and Severity Level 1. By summing the RVUs and Case RVUs for each discharge, we estimate the overall efficiency factor for each facility.

OUTPATIENT RVU DEVELOPMENT AND ADJUDICATION

The outpatient case mix and severity adjustment methodology assigns an RVU for each procedure performed by the hospital using HCPCS.

The Milliman RBRVS for Hospitals outpatient RVUs can be viewed as an extension of the Medicare RBRVS schedule. We use the

TABLE B

**INPATIENT EXAMPLE #2
COMPARISON OF MEDICARE AND APR-DRG RVUS (V2010.0)**

DRG	SEVERITY	DESCRIPTION	FIRST DAY RVUS	ADDITIONAL DAY RVUS
MEDICARE-DRG				
069		TRANSIENT ISCHEMIA	66.848	24.490
APR-DRG				
047	1	TRANSIENT ISCHEMIA	65.682	23.666
047	2	TRANSIENT ISCHEMIA	66.145	23.949
047	3	TRANSIENT ISCHEMIA	70.933	25.383
047	4	TRANSIENT ISCHEMIA	88.064	31.381

* THE FOUR SEVERITY LEVELS AVAILABLE USING APR-DRGS ALLOW FOR A MORE REFINED QUANTIFICATION OF THE RESOURCES REQUIRED FOR SPECIFIC PATIENTS.
* MEDICARE SETS DRG RELATIVE WEIGHTS AT THE CASE RATE LEVEL, NOT ACCOUNTING FOR LOS VARIATIONS.

TABLE C

EXAMPLE OF IMPLIED LOS EFFICIENCY

APR-DRG 047, SEVERITY LEVEL 1 (TRANSIENT ISCHEMIA)

BASE RVUS	BASE LOS	ADDITIONAL DAY RVUS	AVERAGE LOS	CASE RVUS
65.682	1.000	23.666	1.711	82.509

EXAMPLE OF EFFICIENCY CALCULATION

	(1)	(2)	(3)	(4) = (2) / (3)
ASSUMED LENGTH OF STAY (LOS)	ACTUAL LOS	LOS-ADJ. RVUS	CASE RVUS	EFFICIENCY FACTOR
AVERAGE LOS PATIENT	1.711	82.509	82.509	1.000
SHORT LOS PATIENT	1.000	65.682	82.509	0.796
LONG LOS PATIENT	3.000	113.014	82.509	1.370

RBRVS technical component RVUs as a basis for many procedures, such as X-rays and cardiovascular testing. We utilize many other data sources to create our outpatient RVUs including Medicare fee schedules, proprietary data sources and public data sources. Clinical and actuarial reviews are used to finalize the relative relationships.

Our 2010 outpatient hospital RVU schedule consists of 14,129 procedure codes. The breakdown of codes by source is as follows:

3,537	Medicare Fee Schedules
10,592	Milliman Defined
14,129	Total

There are many areas where publicly available fee schedules are not adequate for creating RVUs. We used other databases and our internal resources to estimate the relative resources to perform each of these services. For example, Medicare APCs include procedures of which the true cost may be as low as half of the APC average or as high as twice the average. Therefore, the actual resources required for a procedure within an APC can vary significantly. Since Medicare APCs do not define homogeneous patient services, Milliman Outpatient RVUs are assigned at the HCPCS level, rather than APC. By assigning RVUs at the HCPCS level for outpatient services, we are able to more precisely reflect the resources required for each specific service.

Table D illustrates the resource differences by HCPCS for a sample Medicare APC.

Most outpatient services have Milliman RVUs; however, the treatment of services with no RVUs is important in calculating conversion factors. The outpatient RVU fee schedule includes an identification field for all services that have no RVUs. Some procedures are not valued (NVS) because a more specific HCPCS should be coded. Some HCPCS are not valued because they are typically not paid to a facility, but to a professional provider type (NVO). Bundled procedures are labeled as NVB. Finally some low volume procedures

have not yet been valued (NYV) by Milliman and should be excluded from analysis.

Conditionally packaged codes (status indicator Q) have both an RVU value and a not valued reason (either Q-T or Q-STVX, depending upon the bundling rules applicable to each HCPCS).

Following is a summary of entries for codes with no RVUs:

- NYV = Not Yet Valued
- NVS = Not Valued—non-specific procedure code
- NVO = Not Valued—Other provider type should bill
- NVB = Not Valued—Bundled procedure
- Q-T = Bundled if another code with status indicator T is included in the same claim. Otherwise, RVUs are separately assigned.
- Q-STVX = Bundled if another code with status indicator S, T, V, or X is included in the same claim. Otherwise, RVUs are separately assigned.

Reimbursement analyses can usually be performed with less than perfect data, since we can assume that the calculated conversion factor for the partial data is representative of the complete outpatient data set.

The RVU schedule includes a field labeled "maximum procs," which puts a limit on the number of times a procedure should be performed during a single encounter. This field can be helpful in evaluating reimbursement levels (attaching RVUs) and adjudicating claims. Our adjudication process limits units to the maximum procs for a HCPCS.

RBRVS for Hospitals includes a listing of revenue codes that represent bundled services. No RVUs should be calculated for line items with these revenue codes (unless there is a valid non-bundled CPT/HCPCS code), as the workload is implicitly covered in other lines within the encounter. CPT/HCPCS codes with N status indicators have no RVUs since they are bundled items.

TABLE D

**COMPARISON OF 2010 APC VS RBRVS FOR APC 0269
APC 0269 - LEVEL II ECHOCARDIOGRAM WITHOUT CONTRAST**

CPT/ HCPC	STATUS INDICATOR	DESCRIPTION	APC	APC RATE	MILLIMAN	MEDICARE FREQUENCY
76826	S	ECHO EXAM OF FETAL HEART	0269	\$450.97	\$209.44	41
93304	S	ECHO TRANSTHORACIC	0269	\$450.97	\$251.73	414
93306	S	TTE W/DOPPLER, COMPLETE	0269	\$450.97	\$470.22	546,266
93313	S	ECHO TRANSESOPIHAGEAL	0269	\$450.97	\$442.72	1,428
93350	S	STRESS TTE ONLY	0269	\$450.97	\$350.42	103,575
				MINIMUM	\$209.44	
				MAXIMUM	\$470.22	
				WEIGHTED AVERAGE	\$450.96	

TABLE E

SAMPLE OUTPATIENT CLAIM RVU ASSIGNMENT								
CLAIM NUMBER	CLAIM LINE	REVENUE CODE	PROCEDURE CODE	STATUS INDICATOR	UNITS	RVUS	ADJUDICATED RVUS	COMMENTS
2004999	1	250			5	-	-	BUNDLED REVENUE CODE AND NO HCPCS.
2004999	2	258			1	-	-	BUNDLED REVENUE CODE AND NO HCPCS.
2004999	3	270	A4649	N	3	-	-	BUNDLED CPT/HCPCS CODE. NO RVUS.
2004999	4	300	88302	X	1	0.354	0.354	PAID IN FULL.
2004999	5	360	49580	T	1	56.505	56.505	1ST "T" PROCEDURE. PAID IN FULL.
2004999	6	360	11100	T	1	2.458	1.229	2ND "T" PROCEDURE. REDUCED TO 50%.
2004999	7	370			4	-	-	BUNDLED REVENUE CODE AND NO HCPCS.
2004999	8	636	J2180	N	1	-	-	BUNDLED CPT/HCPCS CODE. NO RVUS.
2004999	9	636	J2270	N	1	-	-	BUNDLED CPT/HCPCS CODE. NO RVUS.
2004999	10	762			1	-	-	BUNDLED REVENUE CODE AND NO HCPCS.
TOTAL							58.088	

Multiple procedure discounting follows the CMS rules. The code with the greatest RVUs and with status T is paid at 100%. Other codes with a T status are paid at 50% and, therefore, assigned half of the standard RVUs.

Table E shows the adjudication of a sample claim.

Note that, as a result of the bundling rules implicit in RBRVS for Hospitals, payment amounts should be compared on a claim-by-claim basis and should not use individual service lines. Payment systems that separately pay bundled services will have higher values for those amounts, but lower values for the main procedure(s) within each encounter.

Outpatient claims do not fall into homogeneous case categories as easily as inpatient claims. However, RBRVS for Hospitals supports hospital efficiency evaluations for emergency room and surgeries. In addition to the procedure RVUs, the user can assign a separate single RVU for the entire case, allowing the user to evaluate efficiency by comparing the case RVUs to the service RVUs. The efficiency-adjusted RVUs can be used to create efficiency-adjusted outpatient conversion factors.

Emergency Room case RVUs assume an average level of ancillary diagnostic and minor surgical procedures that varies by emergency room encounter level. The surgery case RVUs include an average level of ancillaries and additional surgeries for each primary surgical procedure. On average, the total RVUs should be approximately the same for procedure RVUs or case RVUs.

Case RVUs are not a standard part of the HECS license and need to be customized for the provider practice patterns in each service area. Customizing case RVUs for each line of business is a highly technical undertaking. Contact Milliman for help creating case RVUs.

CALCULATING CONVERSION FACTORS

Benchmarking contracts is as straightforward as adding up the allowed charges and RVUs for all procedures performed under that contract. Table F shows an example of calculating an average conversion factor for a data set including one inpatient claim and one outpatient claim.

The procedural basis can be a CPT/HCPCS procedure code (i.e., outpatient hospital services) or a DRG (i.e., inpatient hospital stays). For DRGs, the RVUs vary with the LOS to further reflect the severity within a DRG.

A conversion factor may be calculated for any number and/or mix of services performed under the contract. If a procedure can be performed multiple times in one encounter (i.e., 15-minute physical therapy), then the procedure can either be listed multiple times or

TABLE F

CALCULATING A CONVERSION FACTOR			
	ALLOWED CHARGES	LOS	RVUS
APR 047-1	\$6,000	3	113.014
82441	\$20		0.237
99284	\$275		6.185
A4642*	\$95		-
74150	\$425		5.709
TOTAL	\$6,815		125.145
CONVERSION FACTOR			\$54.46
[ALLOWED CHARGES/RVUS]			

* BUNDLED SERVICE. RVUS ARE IMPLICITLY INCLUDED IN RVUS FOR OTHER CPT/HCPCS CODES.

with multiple units of service on a single line. In either case, the units will be multiplied by the RVUs per unit of service to show RVUs consistent with the charges on the claim.

The HECS case mix and severity adjusted conversion factors provide a means to compare average per-unit costs among contracts, lines of business, health plans, service categories, hospitals or health systems. Since the RBRVS for Hospitals RVUs adjust for the relative resources required to perform the services, the calculated conversion factors are comparable regardless of the underlying population, hospital type, or location. See Table G for an example of conversion factors for six contracts and their relative cost differences.

Users interested in developing a better understanding of the components affecting the average conversion factor may drill down to review the results by type of service. Table H expands the six-contract conversion factor summary from Table G to include each major type of inpatient and outpatient service.

A summary like Table H can be useful in identifying where a contract is high or low and allows the user to develop an action plan to change the contract details in order to improve the desired results.

For example, assume that Table H represents six contracts for a payer and the payer wants to re-negotiate Contract #3 rates to be more in line with the other contracts. Rather than just ask for an overall rate decrease, the payer may want to focus on a particular area, such as outpatient radiology. The payer may either propose that the contract move to use the RBRVS for Hospitals RVUs and a lower conversion factor, or they may simply negotiate a lower payment using the current payment methodology (e.g., percent of billed charges).

Alternatively, assume that Table H represents six contracts for a hospital and the hospital identifies that Contract #2 is a low outlier. The hospital can use the information in Table G to quantify the amount of increase needed. They may decide that they need a 25% increase in inpatient rates, but the outpatient rates are satisfactory.

RBRVS FOR HOSPITALS USERS AND REVIEWS

There are a large number of companies that have or currently use the RBRVS for Hospitals. They include:

- twenty Blue Cross Blue Shield plans
- many other insurers
- three state Medicaid plans
- hospitals (academic, tertiary, community)
- CalPERS (used to create a high performance network)

The RVUs were first developed in 1994 and are updated and reviewed at least once a year, in accordance with Milliman's strict internal peer-review standards. In addition, the RVUs are receiving continuous outside review as they are used by a wide variety of clients.

At the request of a client, an independent actuarial consulting firm performed a review. This review encompassed not only the RVUs themselves, but also the worksheets used to calculate relative provider costs, and ultimately, determine relative facility rankings.

A complete audit of the RVUs and hospital rankings was performed by the California Bureau of State Audits. The audit was comprehensive, covering all aspects of the hospital ranking process. The audit included an on-site review of the RVU development and documentation by an independent actuary hired by the state.

TABLE G

CONTRACT SUMMARY TABLE

	TOTAL CONVERSION FACTOR	CONVERSION FACTOR RELATIVE TO TOTAL
CONTRACT #1	\$55.48	1.000
CONTRACT #2	\$46.29	0.834
CONTRACT #3	\$80.43	1.450
CONTRACT #4	\$60.64	1.093
CONTRACT #5	\$63.70	1.148
CONTRACT #6	\$48.46	0.874
TOTAL	\$55.47	1.000

TABLE H

CONVERSION FACTORS BY MAJOR TYPE OF SERVICE

CONTRACT	INPATIENT CFS					OUTPATIENT CFS					TOTAL AVG	
	MED	SURG	MH/SA	MAT	AVG	ER	SURG	RAD	LAB	OTHER		AVG
CONTRACT #1	\$65	\$52	\$61	\$58	\$58	\$53	\$32	\$68	\$89	\$57	\$50	\$55
CONTRACT #2	\$48	\$30	\$37	\$53	\$40	\$45	\$41	\$77	\$60	\$60	\$53	\$46
CONTRACT #3	\$85	\$92	N/A	\$79	\$86	\$49	\$77	\$95	\$94	\$80	\$77	\$80
CONTRACT #4	\$54	\$41	\$70	\$53	\$53	\$36	\$50	\$81	\$83	\$74	\$67	\$61
CONTRACT #5	\$58	\$44	\$75	\$57	\$57	\$42	\$49	\$87	\$88	\$79	\$69	\$64
CONTRACT #6	\$51	\$33	\$56	\$53	\$45	\$38	\$47	\$54	\$58	\$68	\$50	\$48
TOTAL	\$62	\$48	\$59	\$57	\$55	\$47	\$41	\$72	\$77	\$67	\$56	\$55