Don't Underestimate the Impact of MS-DRGs on Your Bottom Line

Will Fox, FSA, MAAA
Keith Kieffer, CPA, RPH

In September 2007, the Centers for Medicare and Medicaid Services (CMS) released the final rules outlining a significant restructuring of the diagnosis-related group (DRG) system for Medicare and commercial inpatient services, replacing the system that had been in place since 1983 (CMS-DRGs) with Medicare Severity DRGs (MS-DRGs). While the changes were intended to be "cost-neutral" to the Medicare program, our analysis indicates there will be financial winners and losers for payers and hospitals. This paper addresses the financial impact and touches on operational considerations related to the adoption of MS-DRGs.

MS-DRGs were implemented by CMS for traditional Medicare inpatient services on Oct. 1, 2007. The new DRG system significantly increases the number of DRGs used to group patients in an effort to better match payment levels with patient severity. The revised DRGs also incorporate other ongoing changes to the process of developing relative payment weights for each DRG.

Although the operational changes appear to be relatively modest, the financial implications for payment levels may be significant and will vary based on each organization's circumstances. Estimating the financial effect on each organization requires detailed analysis of a particular hospital or health plan's unique circumstances. Hospitals and health plans that assume the changes will "average out" could experience unanticipated financial challenges in the next year and thereafter.

MEDICARE AND COMMERCIAL FINANCIAL RISK

The financial effect on health plans and hospitals results from the magnitude of change to the relative weights used as a basis of payment for each DRG. In many cases, the payment for an individual patient's admission under the new MS-DRG system will increase or decrease by as much as 20% compared with the payment that would have resulted under the CMS-DRG system. In addition, outlier payments will likely change for each organization, as there is less variation among patients assigned to each DRG.

The aggregate effect for each hospital will depend on its specific mix of patients. Our initial estimates suggest that the net change in total Medicare payments will be 5% or less for most hospitals. However:

- Some hospitals may see total Medicare payment reductions of as much as 30%.
- Others could see increases of up to and over 100%.
- Around 60% of all hospitals will receive lower total Medicare payments under the MS-DRG system than they would have received under CMS-DRGs.

For Medicare health plans paying inpatient reimbursement at rates tied to Medicare's rates, aggregate health plan payments will be affected by the specific mix of inpatient services provided to enrollees and also by the distribution of patients among network hospitals with different payment rates. Base Medicare payment levels may vary significantly among hospitals because of disproportionate share and other payment adjustments. In addition, patients with specific diagnoses are often concentrated in certain hospitals rather than being equally distributed among all network hospitals. The net financial effect will vary based on each plan's specific circumstances.

In addition to the potential changes in Medicare payment levels resulting from the adoption of MS-DRGs, future hospital and health plan commercial payment levels may also be affected by these changes. Many health plans and hospitals use CMS-DRGs as the basis for payment under commercial contracts. As CMS does not intend to continue to update the CMS-DRG system in the future, it may be necessary for these organizations to transition to MS-DRGs or to another payment method.

Hospitals and health plans that assume the changes will "average out" could experience unanticipated financial challenges in the next year and thereafter.

MS-DRG STRUCTURE: WHAT'S DIFFERENT?

The introduction of Medicare Severity DRGs (MS-DRGs) version 25.0 as a replacement for the CMS-DRG version 24.0 patient classification system presents the most significant change to DRGs since the system was originally implemented in 1983. The new DRG system better matches payment levels to variations in patient severity.

Table 1 (on the next page) illustrates the change from CMS-DRG version 24.0 to MS-DRG version 25. Note how the new DRGs allow for finer categorization and carry different relative weights.

TABLE 1 ILLUSTRATIVE DRG TRANSITION FROM CMS-DRG V24 TO MS-DRG V25

CMS-DRG V24			MS-DRG V25			
DRG	CMS-DRG Description	Rel. Wt.	DRG	MS-DRG Descriptions	Transitional Rel. Wt.*	Final Rel. Wt.**
127	Heart failure & shock	1.0490	291	Heart failure & shock w MCC	1.2585	1.4942
			292	Heart failure & shock w CC	1.0134	0.9985
			293	Heart failure & shock w/o CC/MCC	0.8765	0.7198
174	G.I. hemorrhage w CC	1.0296	377	G.I. hemorrhage w MCC	1.3367	1.6371
175	G.I. hemorrhage w/o CC	0.5808	378	G.I. hemorrhage w CC	1.0195	1.0037
			379	G.I. hemorrhage w/o CC/MCC	0.8476	0.7577

* Actual Relative Weights used to pay claims in FY2008. Reflects a blend of Cost-Based and Charge-Based weights and CMS-DRG and MS-DRG weights

** MS-DRG Cost-Based FY2008 Relative Weights

The basic structure for determining Medicare payments for each patient remains the same, but patients will be assigned to a revised set of DRGs with different case weights and outlier payment thresholds, resulting in different payment levels for each patient claim. The MS-DRG structure is based on 335 diagnosis groups with up to three patient severity levels for each diagnosis group. MS-DRGs use 745 distinct DRGs to provide more homogeneous groupings of patients than the 538 CMS-DRGs. Because of the redesign, **few of the new MS-DRGs correspond directly to specific CMS-DRGs**. Table 1 illustrates the old and new DRGs for heart failure and shock, and for gastrointestinal hemorrhage.

MS-DRGS WILL SIGNIFICANTLY CHANGE PAYMENTS

While the change from CMS-DRGs to MS-DRGs is intended to be revenue-neutral to Medicare hospitals in aggregate, **individual hospitals will see total payments increase or decrease depending on their mix of conditions and levels of severity present**. As illustrated in Table 2, the impact of transitional and final payment levels for several common conditions may vary significantly from 2007 levels. Note that the final payment weights for certain conditions may not be consistent with the transitional 2008 weights because of the methodology used by CMS to blend the respective DRG structures.

TABLE 2 ILLUSTRATIVE EXAMPLE: FY 2008 VS 2007 MEDICARE RELATIVE WEIGHT CHANGES BY V24 DRG

		FY 2006			RELATIVE WEIGHT		PERCENT CHANGE COMPARED TO V24	
DRG	DRG DESCRIPTION	DISCHARGES	DAYS	V24	AVERAGE V25 TRANSITIONAL	AVERAGE V25 FINAL	V25 TRANSITIONAL	V25 FINAL
557	PERCUTANEOUS CARDIOVASCULAR PROC W DRUG-ELUTING STENT W MAJOR CV DX	122,666	489,434	2.762	2.290	2.235	-17.1%	-19.1%
558	PERCUTANEOUS CARDIOVASCULAR PROC W DRUG-ELUTING STENT W/O MAJ CV DX	174,638	306,691	2.081	2.150	1.999	3.3%	-4.0%
569	MAJOR SMALL & LARGE BOWEL PROCEDURES W CC W MAJOR GI DX	56,622	803,911	4.343	3.775	3.994	-13.1%	-8.0%
570	MAJOR SMALL & LARGE BOWEL PROCDURES W CC W/O MAJOR GI DX	66,139	656,437	2.700	3.051	2.940	13.0%	8.9%
497	SPINAL FUSION EXCEPT CERVICAL W CC	30,595	168,910	3.819	3.656	3.733	-4.3%	-2.3%
498	SPINAL FUSION EXCEPT CERVICAL W/O CC	20,566	73,051	2.990	3.492	3.458	16.8%	15.7%

TIMING OF NEW DRG TRANSITION

- ***Oct. 1, 2007:*** **Beginning of MS-DRGs implementation, merging with the second year of CMS's three-year transition to cost-based DRG weights. The expanded number of DRGs will be used at the beginning of the transition period, but the relative weights of each DRG will be based on a blend of the CMS-DRG and MS-DRG weights.**
- ***Prior to Oct. 1, 2008:*** **CMS intends to review the impact of changes in hospital coding and may make additional adjustments to future payment increases. As part of the transition to MS-DRGs, CMS reduced the payment increase of 3.3% planned for Oct. 1, 2007, to 2.7% to compensate for anticipated coding improvements by hospitals.**
- ***Oct. 1, 2008:*** **The DRG weights will be based exclusively on hospital costs by MS-DRG.**
- ***Oct. 1, 2008:*** **Rule regarding hospital-acquired conditions goes into effect. As of this day, Medicare will no longer adjust DRG payments for the impact of certain hospital-acquired conditions.**
- ***After Oct. 1, 2008:*** **The previous system, CMS-DRG v24.0, will remain available but the DRG relative weights will not be updated to reflect future changes in medical practice or cost. The lack of available updates may require payers and hospitals using CMS-DRGs as the basis of payment to create their own DRG relative weights, adopt MS-DRGs, or move to an alternative method of determining inpatient hospital payments.**

Appendix A illustrates the hospital-specific payment variance using a representative sample of 20 cardiac or gastrointestinal patient discharges from different hospitals across the country.

- The estimated change in hospital payments for these conditions in these hospitals varies from a 49% increase to a 17% decrease using the transitional weights for these conditions.
- The estimated payment change resulting from application of the final weights for these conditions ranges from a 64% increase to a reduction of more than 30% for the sample cases.

Estimating the financial effect of these changes for a health plan or hospital requires detailed analysis of claims data and should be performed using both interim and final MS-DRG weights. Estimates based on general assumptions may not be sufficiently accurate and may not reveal the short-term and long-term financial implications.

THERE WILL BE WINNERS AND LOSERS–BUT WHO ARE THEY AND HOW MUCH ARE WE TALKING ABOUT?

Our analysis of the estimated impact of MS-DRGs demonstrates that, financially speaking, some hospitals will come out "winners" and others will be "losers." This analysis is reflected in Table 3. Based on 2006 data from approximately 3,500 hospitals with at least 200 Medicare discharges, our estimates show that approximately 16% of all hospitals will receive lower aggregate Medicare payments in 2008 than they received in 2007. We estimate that:

- The percentage of hospitals receiving reduced payments will increase to approximately 31% upon full implementation of the MS-DRG system.
- An additional 36% of all hospitals will receive payment increases less than the 2.7% increase announced by CMS for 2008.
- Upon full implementation of the MS-DRG system, slightly less than 40% of all hospitals will have received payments equal to or greater than CMS's stated increase of 2.7%.

While Medicare payment levels for many hospitals will be within 5% of 2007 payment levels, specialty hospitals or hospitals with significant concentrations of Medicare patients with similar diagnoses may experience substantial changes in overall Medicare payment levels. Our analysis suggests that certain hospitals may experience reductions in total Medicare inpatient payments of up to 30% while others may see their Medicare inpatient payments increase by more than 100%. See table 4 for estimates of the range of hospital net payment changes under the transitional and final weights.

TABLE 3 DISTRIBUTION OF HOSPITALS BY RATIO OF 2008 TO 2007 ESTIMATED PAYMENTS

2008 TO 2007 PAYMENT RATIO	2008 TRANSITIONAL	2008 FINAL
<= 1.00	16%	31%
1.00-1.027	36%	30%
> 1.027	48%	39%
Total Hospitals	**3,495**	**3,495**

The Centers for Medicare and Medical Services' stated average increase for all hospitals in 2008 is 2.7%.

TABLE 4 RANGE OF INDIVIDUAL HOSPITAL NET PAYMENT CHANGES (V24 TO V25)

	Transitional	Final
Largest Estimated Percent Reduction	30%	30%
Largest Estimated Payment Increase	105%	104%

Milliman

NO EXTRA PAYMENT FOR HOSPITAL-ACQUIRED CONDITIONS

Starting on Oct. 1, 2008, Medicare will no longer adjust DRG payments for the impact of some hospital-acquired conditions, including:

- **Catheter-associated urinary tract infections**
- **Pressure ulcers**
- **Some serious preventable events (SPEs)**
- **Septicemia**

These changes will be incorporated into the claims grouper used to assign DRGs to individual inpatient stays. It is possible that additional conditions will be added to this list in future years. Payers and hospitals adopting MS-DRGs as a basis for commercial payments should consider this issue as part of their contract negotiations.

OPERATIONAL IMPACT

At the highest levels, the operational effect on payers and hospitals of implementing MS-DRGs is similar to the impact of implementing the annual updates to the CMS-DRGs. As with any annual update to the DRG system, each organization must implement a new grouper, become familiar with the related coding changes, and review contracts to ensure that terms are appropriate for the new structure. **Although the number and complexity of coding changes and potential for contractual issues is greater than with previous updates, the basic implementation process should be similar and should not present significant problems for most organizations.**

SUMMARY

CMS's decision to move to MS-DRGs is the most significant revision to Medicare inpatient payment methods since the implementation of DRGs in the early 1980s. Although the overall effect on the Medicare program is intended to be "cost-neutral," the substantial changes in payment levels for individual cases will result in significant changes to the total amount of Medicare inpatient payments received by many hospitals. These changes may also affect inpatient costs for health plans adopting the new DRG system.

In order to fully understand the financial impact of this significant change in hospital inpatient payment methods, we encourage each payer and hospital to perform a detailed, claims-based analysis using both transitional and final DRG weights.

It would be a mistake to assume that the changes will average out. Payers and hospitals that fail to perform an analysis of their situation may be blindsided by adverse impacts on the bottom line.

Will Fox is a principal and consulting actuary in the Seattle office of Milliman and is available at 206.504.5569 or at will.fox@milliman.com. Keith Kieffer is a management consultant with the Milwaukee office of Milliman and is available at 262.784.2250 or at keith.kieffer@milliman.com. For more information about DRGs, contact the authors or your local Milliman consultant.

The materials in this document represent the opinion of the authors and are not representative of the views of Milliman, Inc. Milliman does not certify the information, nor does it guarantee the accuracy and completeness of such information. Use of such information is voluntary and should not be relied upon unless an independent review of its accuracy and completeness has been performed. Materials may not be reproduced without the express consent of Milliman.

Copyright © 2008 Milliman, Inc.

www.milliman.com

APPENDIX A SAMPLE CLAIMS

			DRG		FY 2006		VERSION 24			VERSION 25	
HOSPITAL ID	**HOSPITAL NAME**	**STATE**	**V24**	**V25**	**DISCHARGES**	**DAYS**	**TOTAL REPRICED**	**REL. WT.**	**CONVERSION FACTOR**	**TOTAL REPRICED**	**REL. WT.**
030043	Sierra Vista Regional Health Center Inc	AZ	127	291	1	6	$5,893	1.049	$5,617	$7,028	1.259
050089	Community Hospital Of San Bernardino	CA	127	291	1	14	$18,140	1.049	$9,401	$23,289	1.259
050752	Brotman Medical Center	CA	127	291	1	8	$7,503	1.049	$7,153	$9,271	1.259
100069	University Community Hospital At Carrollwood	FL	127	291	1	7	$5,552	1.049	$5,292	$6,740	1.259
030105	Banner Baywood Heart Hospital	AZ	127	292	1	7	$5,640	1.049	$5,376	$5,539	1.013
050448	Ridgecrest Regional Hospital	CA	127	292	1	6	$6,026	1.049	$5,744	$6,151	1.013
110020	Newnan Hospital West	GA	127	292	1	2	$4,495	1.049	$5,856	$4,459	1.013
010050	Medical Center Blount	AL	127	293	1	2	$3,986	1.049	$5,193	$4,512	0.876
010118	Vaughan Reg Med Center Parkway Campus	AL	127	293	1	4	$6,887	1.049	$6,565	$5,812	0.876
100130	Glades General Hospital	FL	127	293	1	2	$6,008	1.049	$5,728	$5,346	0.876
110023	Gordon Hospital	GA	127	293	1	3	$6,100	1.049	$5,815	$5,211	0.876
110076	DeKalb Medical Center	GA	127	293	1	2	$4,900	1.049	$6,384	$5,567	0.876
050008	Davies Medical Center	CA	174	377	1	7	$8,237	1.030	$8,000	$10,693	1.337
050140	Kaiser Foundation Hospital Fontana	CA	174	377	1	4	$6,347	1.030	$6,165	$8,512	1.337
050007	Peninsula Medical Center	CA	174	378	1	2	$7,535	1.030	$7,319	$7,428	1.020
100281	Memorial Hospital West	FL	174	378	1	4	$6,484	1.030	$6,298	$6,470	1.020
010069	Lakeview Community Hospital	AL	174	379	1	5	$5,071	1.030	$4,925	$4,236	0.848
050167	San Joaquin General Hospital	CA	174	379	1	2	$9,759	1.030	$9,479	$8,240	0.848
100140	Baptist Medical Center Nassau	FL	174	379	1	2	$5,518	1.030	$5,359	$4,573	0.848
110016	West Georgia Medical Center	GA	174	379	1	6	$5,304	1.030	$5,151	$4,690	0.848
110039	St Joseph's Hospital of Augusta	GA	175	379	1	2	$3,232	0.581	$5,565	$4,807	0.848

Will Fox
Keith Kieffer

TRANSITIONAL	VERSION 25 FINAL			CHANGE TO 2008 TRANSITIONAL				CHANGE TO 2008 FINAL			
CONVERSION FACTOR	TOTAL REPRICED	REL. WT.	CONVERSION FACTOR	CONVERSION FACTOR	CASE MIX	OUTLIER/ TRANSFER FACTOR	TOTAL	CONVERSION FACTOR	CASE MIX	OUTLIER/ TRANSFER FACTOR	TOTAL
$5,585	$8,345	1.494	$5,585	-0.6%	20.0%	0.0%	19.3%	-0.6%	42.4%	0.0%	41.6%
$9,753	$23,749	1.494	$9,753	3.7%	20.0%	3.2%	28.4%	3.7%	42.4%	-11.4%	30.9%
$7,366	$11,007	1.494	$7,366	3.0%	20.0%	0.0%	23.6%	3.0%	42.4%	0.0%	46.7%
$5,355	$8,002	1.494	$5,355	1.2%	20.0%	0.0%	21.4%	1.2%	42.4%	0.0%	44.1%
$5,466	$5,458	0.999	$5,466	1.7%	-3.4%	0.0%	-1.8%	1.7%	-4.8%	0.0%	-3.2%
$6,070	$6,061	0.999	$6,070	5.7%	-3.4%	0.0%	2.1%	5.7%	-4.8%	0.0%	0.6%
$5,978	$4,368	0.999	$5,978	2.1%	-3.4%	0.6%	-0.8%	2.1%	-4.8%	0.0%	-2.8%
$5,283	$3,680	0.720	$5,283	1.7%	-16.4%	33.2%	13.2%	1.7%	-31.4%	32.3%	-7.7%
$6,631	$4,773	0.720	$6,631	1.0%	-16.4%	0.0%	-15.6%	1.0%	-31.4%	0.0%	-30.7%
$6,100	$4,391	0.720	$6,100	6.5%	-16.4%	0.0%	-11.0%	6.5%	-31.4%	0.0%	-26.9%
$5,945	$4,279	0.720	$5,945	2.2%	-16.4%	0.0%	-14.6%	2.2%	-31.4%	0.0%	-29.8%
$6,518	$4,540	0.720	$6,518	2.1%	-16.4%	33.2%	13.6%	2.1%	-31.4%	32.3%	-7.3%
$8,000	$13,096	1.637	$8,000	0.0%	29.8%	0.0%	29.8%	0.0%	59.0%	0.0%	59.0%
$6,368	$10,424	1.637	$6,368	3.3%	29.8%	0.0%	34.1%	3.3%	59.0%	0.0%	64.2%
$7,285	$7,312	1.004	$7,285	-0.5%	-1.0%	0.0%	-1.4%	-0.5%	-2.5%	0.0%	-3.0%
$6,346	$6,370	1.004	$6,346	0.8%	-1.0%	0.0%	-0.2%	0.8%	-2.5%	0.0%	-1.8%
$4,998	$3,787	0.758	$4,998	1.5%	-17.7%	0.0%	-16.5%	1.5%	-26.4%	0.0%	-25.3%
$9,722	$7,367	0.758	$9,722	2.6%	-17.7%	0.0%	-15.6%	2.6%	-26.4%	0.0%	-24.5%
$5,395	$4,088	0.758	$5,395	0.7%	-17.7%	0.0%	-17.1%	0.7%	-26.4%	0.0%	-25.9%
$5,534	$4,193	0.758	$5,534	7.4%	-17.7%	0.0%	-11.6%	7.4%	-26.4%	0.0%	-20.9%
$5,671	$4,297	0.758	$5,671	1.9%	45.9%	0.0%	48.7%	1.9%	30.5%	0.0%	33.0%

Will Fox
Keith Kieffer