Impact of the Transition to ICD-10 on Medicare Inpatient Hospital Payments

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On October 1, 2015, ICD-9-CM is scheduled to be replaced by the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) for reporting diagnosis data across all sites of service and the International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10- PCS) for reporting inpatient procedures. ICD-10- CM/PCS substantially increases the level of clinical detail that can be captured and reported. In the FY 2014 update of ICD-9-CM there were 14,567 diagnosis codes and 3,882 procedure codes. In the FY 2014 update of ICD-10-CM there were 69,823 diagnosis codes and in ICD- 10-PCS there were 71,924 procedure codes. For brevity ICD-10-CM/PCS will be referred to as ICD-10 and ICD-9-CM will be referred to as ICD-9.

The Medicare inpatient prospective payment system (IPPS) uses the Medicare Severity - Diagnosis Related Groups (MS-DRGs) as the basis of payment. An ICD-10 version of the MSDRGs is available for download from the CMS website[1]. The ICD-10 MS-DRGs are a replication of the ICD-9 MS-DRGs. A replication means that the same hospital inpatient medical record coded independently in ICD-10 and ICD- 9 would have the same MS-DRG assigned by the ICD-10 MS-DRGs using the ICD-10 codes and the ICD-9 MS-DRGs using the ICD-9 codes.

Because the ICD-10 MS-DRGs replicate the ICD-9 MS-DRGs, they do not take advantage of the increased specificity of ICD-10. If the ICD-10 MS-DRGs had been optimized to take full advantage of ICD-10, they would have been inconsistent with the existing MS-DRG payment weights. Since there is no substantial database of records coded in ICD-10 available, there is no way of recalibrating the MS-DRG payment weights to correspond to ICD-10 optimized MSDRGs. Hence the MS-DRGs cannot take full advantage of ICD-10 until there is enough ICD- 10 data available to allow the recalculation of the MS-DRG payment weights.

If the only difference between ICD-9 and ICD-10 were the increased specificity in ICD-10, then the ICD-10 MS-DRGs could be an exact replication of the ICD-9 MS-DRGs since it would be possible to treat each ICD-10 code the same way its less specific ICD-9 code was treated. However, ICD-10 differs from ICD-9 in more complex ways. For example, distinctions no longer in common use, such as malignant versus benign hypertension have been removed from ICD-10. In some areas the axis of classification differs. For example, in ICD-10 many obstetric conditions are classified by the trimester of the pregnancy instead of the ICD-9 distinction as to whether a delivery took place. In addition, some of the coding guidelines differ in ICD-10. For example, anemia as manifestation of a chronic disease is no longer coded as principal diagnosis in ICD-10 but is instead reported as a secondary diagnosis. Due to these differences an exact replication of the MS-DRGs in ICD-10 is not possible. The purpose of this article is to describe the extent to which the differences between the ICD-9 and ICD-10 MS-DRGs may impact hospital payment.

Creating ICD-10 Data

Since there is no large-scale database available that contains diagnosis and procedure data coded in ICD-10, it was necessary to create a simulated ICD-10 database by translating the ICD-9 codes on each record to ICD-10. The objective of the translation of a record from ICD- 9 to ICD-10 was to create a *correctly coded* ICD- 10 version of the same record.

A set of context specific translation rules (described in detail in a previous article) was developed to automate the determination of the best possible ICD-10 translation.[2] The ICD-9 codes on a record were *not* translated one by one, but instead the ICD-9 codes on the record were evaluated as a group in creating an ICD-10 coded version of the record. By evaluating the ICD-9 codes as a group, selection of the ICD-10 codes that best represented how the record would be coded in ICD-10 was more accurate.

Database

A base payment amount for each admission was computed using the full update standard operating amount for FY15, multiplying by the MS-DRG weight, adjusting the labor share of the claim by the wage index and COLA and then inflating the entire claim by the DSH and IME coefficients. A separate calculation for high cost outliers was estimated based on the operation portion of the cost. No further adjustments were made for capital related costs nor quality adjustments that may result in less than a full update.

Payment Impact

The ICD-9 MS-DRG Version 32 was used to assign the MS-DRGs to the ICD-9 MedPAR data and the ICD-10 MS-DRG Version 32 was used to assign the MS-DRGs to the converted ICD-10 MedPAR data. Based on the MS-DRG assigned, the payment amount for each admission in the database was computed. If the ICD-9 MS-DRG assignment differed from the ICD-10 MS-DRG assignment, two separate payment amounts were computed.

The ICD-9 MS-DRG and ICD-10 MS-DRG assignments differed for 1.07% percent of the admissions. The ICD-10 MS-DRG assignment was to a higher paying MS-DRG in 0.41 percent of the admissions, resulting in a payment increase of 0.13 of a percent. The ICD-10 MS-DRG assignment was to a lower paying MS-DRG in 0.66 percent of the admissions, resulting in a payment decrease of 0.17 of a percent. The net payment change due to differences in MS-DRG assignment was -0.04 of a percent (i.e., 4 onehundredths of one percent of the ICD-9 based MS-DRG payments). Thus, estimated payment increases and decreases due to changes in MSDRG assignment essentially netted out.

The results of the payment impact analysis by hospital type are contained in Table 1. The estimated change in MS-DRG assignment is relatively consistent across hospital types, with the 20 percent of hospitals with the smallest disproportionate share having the smallest change in MS-DRG assignment (0.98 of a percent), and the 10 percent of hospitals with the biggest indirect medical education adjustment having the largest change in MS-DRG assignment (1.25 percent). The change in payment was more consistent across hospital types, with the 10 percent of hospitals with the biggest indirect medical education adjustment having a -0.01 of a percent decrease in payment and the rural hospitals having a -0.06 of a percent payment decrease.

Table 1: Payment Impact of ICD-10 vs ICD-9 MS-DRG assignment based on MedPAR FY 2015

Hospital Type	Count Hospitals	Count Discharges	Tot Pay ($000,000)	% Diff Count	% Diff Payment
All	3,205	10,009,934	106,889,989	1.07%	-0.04%
IME[1]					
Top 10%	103	623,877	13,097,323	1.25%	-0.01%
All others	3,102	9,386,057	93,792,666	1.06%	-0.05%
DSH[2]					
Top 20%	641	1,980,029	26,107,820	1.22%	-0.05%
Middle 60%	1,923	6,420,531	65,145,068	1.05%	-0.04%
Bottom 20%	641	1,609,374	15,637,101	0.98%	-0.02%
Location					
Large Urban	1,340	4,974,766	59,240,865	1.13%	-0.04%
Other Urban	1,084	3,957,329	40,016,872	1.02%	-0.04%
Rural	781	1,077,839	7,632,253	1.00%	-0.06%
Size					
Top 10%	320	3,257,861	41,560,229	1.08%	-0.02%
All other	2,885	6,752,073	65,329,760	1.07%	-0.05%

[1] IME = Indirect Medical Education
[2] DSH = Disproportionate Share Hospital

Discussion

The increased specificity of ICD-10 will require hospitals to improve documentation and coding precision. Although this represents a change in hospital coding practices, the change in coding practices will have minimal impact on MS-DRG assignment because the ICD-10 MS-DRGs are a replication of the ICD-9 MS-DRGs and do not take advantage of the increased specificity of ICD-10. Essentially, the replicated ICD-10 MS-DRG function at the same level of specificity as the ICD-9 MS-DRGs.

When the MS-DRGs are optimized to take advantage of the detail in ICD-10, there may be a substantial impact on payments. However, the ICD-10 optimization of MS-DRGs cannot occur until there is sufficient ICD-10 data available to allow MS-DRG payment weights corresponding to the ICD-10 optimized MS-DRGs to be computed. Realistically, the earliest an ICD-10 optimized version of MS-DRGs can be implemented is FY2018. This means that there will be two years of ICD-10 coded data available before an ICD-10 optimized version of the MSDRGs is implemented.

The availability of two years of ICD-10 data will allow any systematic changes in coding practices under ICD-10 to be reviewed and evaluated. Potential opportunities for up-coding under ICD-10 can be mitigated by using the two years of ICD-10 data to find the changes in coding practices under ICD-10 that impact MSDRG definitions and payment weights. Although an ICD-10 optimized version of the MS-DRGs must wait two years for recalibrated MS-DRG payment weights, the two-year delay allows for the evaluation of changes in coding practices, to minimize opportunities for upcoding in the ICD-10 optimized MS-DRGs.

Conclusions

The transition from the ICD-9 version of the MS-DRGs to the ICD-10 version of the MSDRGs will have a minimal impact on aggregate payments to hospitals (-0.04 of a percent) and on the distribution of payments across hospital types (-0.01 to -0.06 of a percent). Although the transition from the ICD-9 version of the MSDRGs to the ICD-10 version resulted in 1.07 percent of the patients being assigned to different MS-DRGs, overall payment increases and decreases due to a change in MS-DRG assignment essentially net out.

References

[1] http://www.cms.gov/Medicare/Coding/ICD10/ICD-10-MS-DRG-Conversion-Project.html

[2] Mills, R, Butler, R, McCullough, E, Bao, M, Averill, R, “Impact of the Transition to ICD-10 on Medicare Inpatient Hospital Payments”, *Medicare & Medicaid Research Review* 2011, Vol 2, No. 2, 2011, pp E1-E13 2011.

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