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Implications of Conversion to ICD-10-CM on Trauma Coding and Reimbursement: A Report from the AAST Committee on Coding and Reimbursement

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Introduction

On October 1, 2015, physicians and hospitals in the United States were required the Centers for Medicaid and Medicare Services (CMS) to begin using ICD-10-CM codes for reimbursement, replacing the 20-year-old ICD-9-CM system. We hypothesized that changes to coding complexity could affect reimbursement processes for trauma centers and trauma surgeons. To quantify this potential challenge, we examined the change in complexity of trauma-related ICD-10-CM codes in comparison to other disease categories.

Method

ICD-9-CM and ICD-10-CM codes and descriptions were downloaded from the Centers for Disease Control and Prevention's website, as well as general equivalency mapping tables between the two coding systems. These data elements were imported into a Microsoft Access database for analysis using sequential queries. ICD-9-CM and ICD-10-CM codes were then organized and quantified by disease category.

In comparison to the 14,567 diagnostic codes comprising ICD-9-CM, the fully configured ICD-10-CM code-set has 91,737 diagnostic codes, an increase of 630%. The ICD-10-CM system is sectioned into 21 disease categories (Figure 1). In ICD-9-CM, the Injury and Poisoning category comprised 17.8% of the available codes, whereas that category comprises 58.4% of the total codes in ICD-10-CM. When the injury-related codes themselves (n=42,675) are separated from the poisoning codes (n=9,728), but combined with the external causes related to injury (n=9,245), the trauma-related codes total 51,920 or 57.8% of the total.

Much of the increased code volume is due to replicative codes concerning the episode of care ("initial", "subsequent", or "sequela") and laterality ("right" or "left"). There are 35,775 codes in all of ICD-10 that include episode of care determinations, of which 28,830 (80.6%) are trauma-related. Similarly, there are 29,918 codes that require a laterality determination, of which 23,660 (79%) are trauma-related.

Discussion and Conclusion

ICD-10-CM represents a massive expansion in diagnostic codes for billing and reimbursement. The largest increase occurs in codes related to trauma, which places a disproportionate documentation burden on trauma surgeons compared to other physicians.

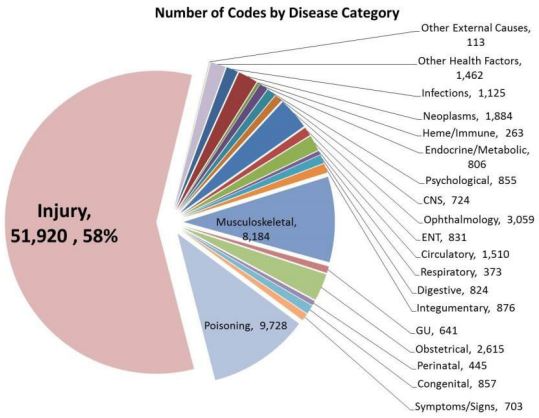

Figure 1: Number and Percentage of ICD-10-CM Codes by Disease Category.

For example, there are 1,003 ICD-10-CM codes for trauma to the lower limbs. Focusing just on the codes for fractures of the left femur, there are 63 separate codes, differing in the type of fracture ("Salter-Harris Type I," "Salter-Harris Type II," "Salter-Harris Type III," "Salter-Harris Type IV," "Other," or "Unspecified"); fracture location ("upper end" or "lower end"); episode of care ("initial," "subsequent," and "sequela"); and nature of healing ("routine healing," "delayed healing," "non-union," and "malunion"). In addition, there are 63 codes differentiated along the same criteria for right femur fractures. Thus, there are 126 different codes for femur fractures. (It is difficult to believe these all represent different diseases). In contrast, there are only 3 codes for malignant neoplasms of the femur differing in side ("right", "left", or "unspecified").

Thus, the various tumor types (i.e., osteosarcoma, chondrosarcoma, etc.), their grades, stages, and episodes of care are not captured at all. Thus the ICD-10 taxonomy appears to consider a right femur fracture to be a different disease than a left femur fracture, because they have separate and specific disease code. But a low-grade right femur osteosarcoma stage I is considered to be the same disease as a high-grade right femur chondrosarcoma stage IV, because they share the same code. Such examples of the disproportionate complexity of injury coding call into question the clinical relevance and research benefit of the conversion to ICD-10-CM coding.

The impact of the conversion to ICD-10-CM coding on physician and hospital reimbursement is unclear thus far, because CMS has only

recently (October 2016) begun to deny claims based on the expanded ICD-10-CM codes. However, to be successful in receiving legitimate reimbursement for procedures and services, it appears that trauma surgeons, in particular, will need to acquire a solid working knowledge of the ICD-10-CM code set and the available look-up tools. Furthermore, trauma centers should be prepared to provide support with coding, given the risk to hospital reimbursement. Future studies should examine rates of denial of claims among different fields of medicine to assess the financial burden of this change in CMS policy.