Evaluating Clinical Scenarios in Coding Clinic with Data Analytics

By Anne Casto, RHIA, CCS

The American Hospital Association's *Coding Clinic* publishes valuable advice and guidance for coding professionals, but can coding professionals learn even more from this publication? What could coding professionals gain if *Coding Clinic* entries were summarized over a period of time? Using a data analytics approach to evaluate the advice published in *Coding Clinic* can provide actionable information for coding professionals.

In preparation for the transition to ICD-10-PCS, *Coding Clinic* began including ICD-10-PCS advice in the Fourth Quarter 2012 issue. Since then, there have been numerous "Ask the Editor" questions about PCS coding. For the purposes of this article, all clinical scenarios published in *Coding Clinic* from the Fourth Quarter 2012 issue to the Fourth Quarter 2018 issue that contained ICD-10-PCS codes were cataloged. Data was cataloged by PCS section, body system, root operation, and PCS code. Our study included codes in the Medical and Surgical section of ICD-10-PCS.

Coding scenario topics published in *Coding Clinic* tend to be situations that require advanced advice or situations that have been queried by multiple coding professionals. These complex queries represent challenging coding cases. In order to compare topics and coding scenarios presented in *Coding Clinic* to actual procedure reporting, the author utilized the 2016 Medicare Claims Data IPPS Standard Analytical File. This data set contains Medicare inpatient claims data from January 2016 to December 2016. Using claims data helps to determine if the codes included in *Coding Clinic* also have significant volume in actual coding practice.

The top five body systems included in *Coding Clinic* coding scenarios are:

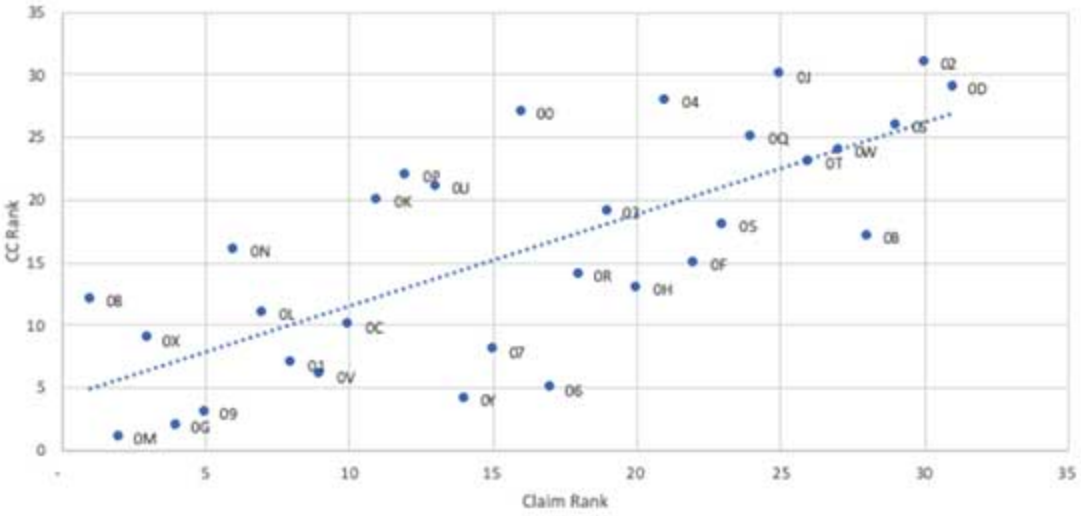
1. Heart and Great Vessels (02)
2. Subcutaneous Tissue and Fascia (0J)
3. Gastrointestinal System (0D)
4. Lower Arteries (04)
5. Central Nervous System and Cranial Nerves (00)

Two out of the five top *Coding Clinic* body systems are also included in the top five body systems in claims data, which include:

1. Gastrointestinal System (0D)
2. Heart and Great Vessels (02)
3. Lower Joints (0S)
4. Respiratory System (0B)
5. General Anatomical Regions (0W)

Correlation was used to examine the relationship between claim volume and *Coding Clinic* scenario volume, with the assistance of the Spearman Rank Correlation Coefficient, which is based on the rank of the body system volume in both the claims and scenario data. Rank is a robust data tool that eliminates the influence of high and low outliers. The correlation for this study is 0.73, which is a very strong result as shown in Figure 1 (below).

Figure 1: Relationship Between Claim Rank and Coding Clinic Rank



Correlation ranges from -1 to +1. A result of +1 means that all points line up on the trend line with a positive slope (uphill). A result of -1 means that all points line up on the trend line with a negative slope (downhill). In Figure 1, the Anatomical Regions, General body system (0W) is directly on the trend line. This is the body system with the greatest correlation between *Coding Clinic* and claim volume. The Central Nervous System and Cranial Nerves body system (00) does not have much correlation —though it is heavily represented in *Coding Clinic*, it does not have a high volume of claims data. Overall, the correlation value of 0.73 for this study reveals that the coding scenarios published in *Coding Clinic* are not obscure scenarios that are unlikely to appear in "real life." Rather, the advice is relevant to coding professionals' performance because there is also significant volume in the claims data.

The next step in the analysis was to drill down to the root operation level. Table 1 and Table 2 (below) show the top root operations for Gastrointestinal System (0D) and Heart and Great Vessels (02) as reported in Medicare claims data.

Table 1: Top Root Operations for Gastrointestinal System (0D)

Gastrointestinal System Rank in Claims Data	Root Operation in Gastrointestinal System Claims Data	Root Operation in Gastrointestinal System Claims Data	Root Operation in Gastrointestinal System Claims Data
1	Excision	40%	✓
2	Inspection	20%	
3	Insertion	8%	
4	Resection	7%	✓
5	Release	6%	✓

Percent of Total Body System Codes		81%	

Table 1: Top Root Operations for Heart and Great Vessels (02)

Heart and Great Vessels Rank in Claims Data	Root Operation in Heart and Great Vessels Claims Data	% of Body System Codes	Root Operation in AHA Coding Clinic®
1	Insertion	59%	✓
2	Dilation	14%	✓
3	Replacement	10%	
4	Bypass	5%	✓
5	Destruction	2%	
Percent of Total Body System Codes		90%	

There are a few interesting data points in this analysis. First, the top five root operations account for 81 percent of all Gastrointestinal System procedures and 90 percent of all Heart and Great Vessels procedures. This means that coding professionals are often using these root operations in practice. Second, for each body system, three of the five root operations have significant volume in the *Coding Clinic* scenarios. Coding professionals should review past issues of *Coding Clinic* and ensure they fully understand the advice provided for these body systems and root operations. Additionally, coding managers should consider monitoring and auditing PCS coding in these areas as they could be high-volume, high-risk areas at their facility. Likewise, managers should provide coding professionals with continuing education hours for these root operations. Lastly, educators must ensure that students are given ample opportunities to practice coding these root operations in ICD-10-PCS courses.

The other top three body systems showed similar results as noted in the Gastrointestinal System and Heart and Great Vessels. Three to four of the top root operations for each body system also had significant presence in *Coding Clinic*. This analysis is merely the tip of the iceberg. Overall, this study shows that Coding Clinic provides a rich data set that can be used to identify areas of coding risk, beginner and advanced education, and professional development.

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