Coding Accuracy Issues in Cardiovascular Procedures Point to Significant Revenue Improvement Opportunities for Hospitals
An Aggregate Analysis of Three Years of Audits of Cardiovascular Cases by ZHealth

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EXECUTIVE SUMMARY
The complexity of cardiovascular procedures in the cath lab creates challenges in the process of consistently documenting and accurately coding such outpatient procedures. Current workflows, structured reporting systems and coding technologies do not sufficiently resolve these challenges. Aggregating the data from 51 U.S. hospital systems requesting audits of their cardiovascular coding by ZHealth, only 55.1% of cases were coded correctly to the documentation provided. Under-coded cases that would cause a greater Medicare reimbursement amount accounted for 4.1% of total cases. Over-coded cases with a reimbursement impact accounted for 2.7% of total cases. Cases that were miscoded but would not cause a different Medicare reimbursement amount represented 38.1% of total cases. For Medicare payments alone, under-coded cases had $8,051 average anticipated under-reimbursement per affected case. Likewise, over-coded cases had $5,380 average anticipated over-reimbursement per affected case. The net impact for a cardiovascular service line spread over all its outpatient procedures would be a net $180 average under-reimbursement of Medicare reimbursement per case. For example, a cath lab performing 5,000 outpatient cases per year could be estimated to have a net Medicare reimbursement of $900,000 per year in documentation and coding accuracy issues. Also, these 5,000 cases would include 135 that were over-coded to Medicare, creating legal and compliance risks beyond the reimbursement impact.

METHODS AND DATA COLLECTION
Hospitals in this analysis requested ZHealth to perform audits of their cardiovascular cases to assess the accuracy of the CPT coding to the clinical documentation. Fifty-one hospitals and healthcare systems provided 2,931 outpatient Medicare cases from the cath lab over a three-year period from 2016 through 2018. Motivations for hospitals requesting audits vary and include both high-performing institutions monitoring their effectiveness and under-performing institutions seeking to quantify their opportunity for improvement. Information used for these audits included the CPT codes billed and the clinical documentation supporting the coding. All data was managed according to the requirements of Business Associate Agreements (BAAs).
Cases were individually reviewed by physicians familiar with the procedures and with advanced knowledge of CPT codes. CPT codes were assessed to the appropriate edition of rules found in CMS National Correct Coding Initiative (NCCI) Policy Manuals, applicable National Coverage Determinations (NDCs) and Dr. Z’s Medical Coding Series, Diagnostic & Interventional Cardiovascular Coding Reference¹. Each case was flagged as either accurate, net neutral, over-coded or under-coded, according to auditing physicians’ determination. Medicare reimbursement rates were used to determine the dollar impact of each over-coded and under-coded scenario. Hospitals received verbal and written reports that summarized both documentation issues (such as information missing from the provider’s report) and coding issues (such as misapplication of CPT rules). The auditing physicians were principals or owners of ZHealth, LLC.

RESULTS
Only 55.1% of 2,931 cases were coded correctly to the documentation provided. Of the total cases, 38.1% (1,118 cases) were miscoded but would not cause a different Medicare reimbursement amount to the hospital, based on the Ambulatory Payment Classification (APC) and complexity adjustments.

Under-coded cases comprised 4.1% (119) of the overall cases. The Medicare reimbursement for each of these cases averaged $8,051 under-reimbursed. Over-coded cases comprised 2.7% (80) of the overall cases, with an estimated Medicare reimbursement impact of $5,380 on average for each of these over-coded cases.

<table>
<thead>
<tr>
<th>Inaccurate Coding</th>
<th>Total</th>
<th>Accurate</th>
<th>Net Neutral</th>
<th>Under-Coded</th>
<th>Over-Coded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases</td>
<td>2,931</td>
<td>1,614</td>
<td>1,118</td>
<td>119</td>
<td>80</td>
</tr>
<tr>
<td>% of Total</td>
<td>100.0%</td>
<td>55.1%</td>
<td>38.1%</td>
<td>4.1%</td>
<td>2.7%</td>
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<tr>
<td>Total Dollar Impact</td>
<td>$0</td>
<td>$958,068</td>
<td>$430,435</td>
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</tr>
<tr>
<td>Per Affected Case</td>
<td>$8,051</td>
<td>$5,380</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Total Cases</td>
<td>$327</td>
<td>$147</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Net Impact Per Case (Outpatient Medicare)** $180 under-coded

¹ Table 1 - Net Impact Per Case (Outpatient Medicare)
DISCUSSION
For hospital administrators, it is helpful to put the cost and frequency of inaccurate coding in terms of the average impact per outpatient case. From this perspective, the average under-reimbursement per case is $327 and the average over-reimbursement per case is $147, for a net under-reimbursement per case of $180. For example, a cath lab service line that performs 5,000 Medicare outpatient cases per year could be under-coding by roughly $900,000 ($180 x 5,000 cases) due to documentation and coding issues.

Over-coding, or the act of billing for higher-reimbursing or additional codes that are not supported by the clinical documentation, has significant legal and financial risk. Each year, the example hospital would likely have 135 of the 5,000 Medicare outpatient cases containing over-coding errors.

Inaccurate coding of cardiovascular procedures is not caused only by the complexity of the coding rules, but also by the challenges in the documentation and billing process. Accurate documentation by the physician is essential and must provide sufficient information for coding. The accuracy of other information, such as devices and charges entered by the cath lab technician, can also impact what is billed. Hospital administrators, revenue cycle leaders, and cardiovascular service line owners should approach the problem of coding accuracy from a systems perspective, examining all aspects of the process, from the procedure to billing.

1 Zielske DR, Broek RE and Dunn DB, Dr. Z’s Medical Coding Series, Diagnostic & Interventional Cardiovascular Coding Reference. ZHealth Publishing, 2016-2018.

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