Data Analytics: Next Step for Coding Specialists?

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Data Analytics
Science of examining raw data to draw conclusions about that information. It is distinguished from data mining, which uses huge data sets to identify patterns. Data analytics focuses on inference, deriving a conclusion based solely on what is already known by the researcher.

Skills Needed for Data Analysis
- Qualitative Analysis requires inductive reasoning skills—more subjective, looking at one occurrence in the data and wondering if it could be a wider problem
- Quantitative Analysis requires deductive reasoning skills—objective work with rates, frequencies, totals, percents
- Requires knowledge of coded data—must have a solid knowledge of how codes assigned in the area being analyzed, requires advanced coding knowledge

Other Skills Needed for Data Analysis
- Ability to see potential relationships between data elements
- Critical thinking skills
- Ability to present complex information in an understandable and compelling manner
- Project management skills

Data Analysis—Who Better than Coders?
- Detail-oriented
- Ability to read a medical record and follow the patient’s story
- Knowledge of patient data flow through the organization
- Knowledge of Pathophysiology
- Knowledge of common treatment patterns for similar diagnoses
- Knowledge of Codes to see if those match up to the charges on the claim & if they give an accurate picture of patient’s episode of care
- Knowledge of individual MD practice patterns
- Knowledge of available data & how to integrate it
- Ability to communicate with Finance, IT, and Physicians
- Knowledge of Core Measures

Why is Data Analytics so Critical Today?
- Transition to ICD-10 means lots of potential for coding/data analysis errors and billing errors
- Changes in Payment methodologies & Reimbursement as we move to Value Based Purchasing and Payment based on Severity/Complexity
Potential Coding, Billing, DRG Errors

Case Study
Insurance Company XYZ

• Contract terms
  – 50% of billed charges
  – Stop loss Clause: Stop loss = 100% payment after total charges exceed a certain contractual dollar amount.
  – Stop loss = 100% of billed charges if stop loss criteria of $75,000 (total charges) is exceeded

Patient Claim Included
• Dual chamber cardiac pacemaker insertion due to sinus bradycardia. Patient with ESRD developed post-operative respiratory failure. The patient received mechanical ventilation for 2 days in the ICU as well as 3 hemodialysis treatments
  • Diagnosis codes = R00.1, J95.821, N18.6, Z99.2
  • Procedure codes = 02HK3JZ, 02H63JZ, 0JH606Z, 5A1945Z, 5A1D60Z
  • Length of stay = 11 days

• D/C disposition code = 01, Routine home
• Total charges = $85,295
• Pacemaker device charge = $10,794
• Pacemaker device revenue code = 0278, Supply/Implants
• Payment = $42,647.50 (50% billed charges)
• Why was payment 50% of charges?
• What about $75,000 stop-loss threshold?
• $85,295-$10,974 = $74,501—why was device amount subtracted?
• What code should be changed to correct payment?
• Rev Code corrected to 275, Pacemaker
• Corrected payment = $85,295

Coder Skills/Knowledge Used
• Knowledge of codes on claim
• Ability to compare that to Revenue Codes assigned
• Rev Code 278 Used—Supply/Implants when Rev Code 275 for Pacemaker should have been used, so device amount subtracted from the total charges and failed to meet the stop loss threshold

Case Study—OP Claim
• CPT 33240, Insertion pacing cardioverter-defibrillator pulse generator only, single lead
• CPT 33222, Revision or relocation of skin pocket for pacemaker
• HCPCS C1721, Cardioverter-defibrillator, dual-chamber (implantable)
• Device charges $10,000 - $12,000
• Claim was rejected—Why?
Coding Skills/Knowledge Used

- Knowledge of Codes on Claim
- Ability to analyze codes assigned by coders compared to codes from Chargemaster (CDM)
- HCPCS code for dual-chamber assigned from CDM, when single chamber device implanted—claim scrubber missed it

Coding Pacemaker Leads

- Coders are coding insertion of pacemaker leads to “percutaneous endoscopic approach” (02HK4JZ, 02H64JZ)
- This can cause the case to group to DRG 310 Arrhythmias rather than to the Pacemaker DRGs
- Why?
- Leads usually inserted “percutaneous” NOT percutaneous endoscopic
- When correct approach is coded, will group to DRG 244 Permanent pacemaker implant

Other Areas for Improvement

- How many TURP cases are being coded to Resection?
- How many cases of simple Pneumonia have Respiratory Failure, BiPAP, or other indicators of Complex Pneumonia coded?
- How many cases of CHF have “noncompliance” code assigned?
- Are hospitals coding arterial lines or other OR procedures that are negatively impacting mortality scores?
- Do DRGs or payments look the same in ICD-10 as they did in ICD-9 for your facility?
- ICD-10-PCS IP procedures are not linked to chargemaster—who ensures that IP charges from CDM match PCS procedures assigned by coders?

Who is Looking at This?

- Are any coders involved in reviewing these issues?
- As we move forward w/ ICD-10, and greater use of Computer-Assisted Coding (CAC), the coders’ role will evolve into “code-itors” (code-editors)

Proposed Healthcare Models

- Bundled Payments
  - Condition-Specific Capitation Model
  - Episode of Care Model
  - Accountable Care Organizations
  - Managed Care
  - Payment Based on Severity/Complexity

Changes in Payment Methodologies
Value-Based Purchasing (P4P)

- IP Reimbursement based on Quality of Care (Quality Measures or Core Measures & Hospital-Acquired Conditions) performance—24 measures for FY 2016
- Hospitals paid based on:
  - Performance on each measure and/or
  - Level of improvement for each measure compared to baseline period performance—hospital score is higher of these two
- Includes Mortality measures & Readmission Rates for certain diagnoses, and scores from HCAHPS (patient) surveys
- Funded by decreasing hospital DRG payments

Using Evidence-Based Guidelines, such as . . .

- Surgical Site Infections: prophylactic abx discontinued within 24 hrs after surgery end time
- VTE: surgery patients receiving appropriate venous thromboembolism prophylaxis within 24 hours prior to and 24 hours after surgery
- Influenza immunization
- Urinary Catheter: surgical patients with catheter removal on postop day 1 or postop day 2

Readmissions Reduction Program

- Affordable Care Act mandated program beginning FY 2013
- 30-day readmission measures for
  - Heart attack
  - Heart failure
  - Pneumonia—now includes Aspiration PNA and Sepsis patients coded with PNA POA
  - COPD acute exacerbation
  - Elective total hip and total knee arthroplasty
  - CABG
- Hospital performance to be assessed on readmissions using a three-year measurement period

Resource Management

Most costly resource to manage
“An MD w/ a pen in his hand”

Resource Management

- Move from educating clinicians and staff about documentation, coding, and DRGs to facilitating changes in patient care practices
- Must be a Multi-disciplinary approach
- Look at patterns to improve:
  - clinical outcomes
  - patient satisfaction
  - costs of providing care
Issues to Evaluate

- Payment for Services compared to costs
- LOS compared to GMLOS & also how it impacts % of services by Rev code areas across all DRGs
- Cases falling Core Measures based on Pds billed
- Admissions from ED
- Unnecessary tests, uncompensated tests
- Duplicate orders
- MD practice patterns
- Illegibility, Lack of Documentation
- Response time for tests & results
- Standing Protocols, Standing Orders
- Hybrid Medical Records
- EMR taking much longer to document, harder to find the “new” or “needed” information, negative impact on medication errors, “cloning”
- Comparing data across all hospitals in multi-hospital systems to determine differences in patient care practices, etc.

Determine Case-Mix Adjusted Average Cost

Total cost of care for your patients

\[
\text{# Patients} \times \text{Average Cost/Patient} = \text{Average Cost for CMI of 1.0000}
\]

- Compare that to your Medicare Base/Blended Rate
- If cost < reimbursement, you are probably efficient and making a profit

Example

- Your Average Costs = $10,000
- CMI = 1.5000
- \( \frac{$10,000}{1.5000} = $6,666.67 \)
- Medicare Blended Rate = $5,500

Making a Profit?

Data Analysis—Evaluate Resource Patterns by DRG (or APC)

ASSUMPTION: All cases in a particular DRG should have fairly similar resource use

- Obtain a breakdown of charges by Rev code areas, such as Lab, Radiology, Pharmacy, ICU, etc.
- Look for patterns of care & resource use from highest to lowest charges/case, broken down by MD
- See where the average charges by Rev code are similar and where there is significant variability
- Focus on the areas of variability

Data Analysis: Hospital Data to CMS Data

<table>
<thead>
<tr>
<th>MS-DRG</th>
<th>Description</th>
<th>% Cases</th>
<th>Average Charges</th>
</tr>
</thead>
<tbody>
<tr>
<td>193</td>
<td>Simple Pneumonia w/ MCC=CMS data</td>
<td>18.4%</td>
<td>$30,876</td>
</tr>
<tr>
<td>193</td>
<td>Hospital Data</td>
<td>17.3%</td>
<td>$23,254</td>
</tr>
<tr>
<td>194</td>
<td>Simple Pneumonia w/ CC=CMS data</td>
<td>53.5%</td>
<td>$24,785</td>
</tr>
<tr>
<td>194</td>
<td>Hospital Data</td>
<td>62.4%</td>
<td>$21,385</td>
</tr>
<tr>
<td>195</td>
<td>Simple Pneumonia w/o MCC or CC—CMS data</td>
<td>28.5%</td>
<td>$13,547</td>
</tr>
<tr>
<td>195</td>
<td>Hospital Data</td>
<td>22.2%</td>
<td>$13,547</td>
</tr>
</tbody>
</table>

Data Analysis: Costs vs Payment

<table>
<thead>
<tr>
<th>MS-DRG</th>
<th>Description</th>
<th>Average Room/Bd</th>
<th>Average DRG Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>193</td>
<td>Simple Pneumonia w/ MCC</td>
<td>$3,931 1 ICU day</td>
<td>$6,807</td>
</tr>
<tr>
<td>194</td>
<td>Simple Pneumonia w/ CC</td>
<td>$4,327 5 ICU days</td>
<td>$5,497</td>
</tr>
<tr>
<td>195</td>
<td>Simple Pneumonia w/o CC/MCC</td>
<td>$2,571 3 ICU days</td>
<td>$4,575</td>
</tr>
</tbody>
</table>
Case Study—Hospital Project

- Reviewing Top DRGs, CMI was tracking upward overall about 4.7 – 4.8% from previous year
- However, analyzing data on paid claims showed hospital was (-$193,743) for the fiscal year being reviewed
- Set up Team with Case Managers, Coders, CFO, Medical Director, Coding Consultant, and Company compiling the Data from 837s or 835s
- Collected data on top MS-DRGs—was there gain or loss of revenue?
  - COPD, CVA, Circul Disorders w/ Cath; Major Joint Replacement, Simple Pneumonia, Heart Failure, Sepsis w/o vent 96 hrs, Complex Pneumonias, UTI

Initial Data Review

- Review of Claims to see if Diagnosis Codes, Procedure Codes, & Charges appeared to be correct, e.g. Hemodialysis charge on bill, but no dx code for ESRD
- Used software to break down patient charges for each patient in the targeted DRG by Rev Codes
- Evaluation of Charges by Rev Code to see which patients’ charges were very high or very low compared to the others in that DRG, e.g. $12,280 in charges for Resp Tx for a patient, due to a specific drug usually prescribed for Respiratory Failure, but coded only as COPD exacerbation

Data Analysis

- Data on Simple Pneumonia MS-DRGs—YTD Loss of $38,540 in the study sample—how many billed to J18.9?
- 2 patients had heart caths performed during Pneumonia stay—reviewed to verify if they had unstable angina
- 2 patients in lowest severity level of Simple Pneumonia DRGs had ICU stays
- Several Pneumonia patients who presented w/ AMS and had CTs ordered in ED—those were costing about $1900 each
- Patients admitted on Friday for Heart Cath on Monday—normal practice for one Cardiologist
- Some MDs practicing the “while you’re here” syndrome

Team Analysis

- The Team met to review the charts that Coding Consultant determined were aberrant, obtain physician input from the Medical Director, and determine if any of the cases should generate an MD query and/or could be re-billed from current documentation
- Identified specific issues/patterns that occurred for high-cost patients to see if corrective actions could be taken, e.g. some MDs keeping CHF pts on Natrecor longer than 48 hrs when evidence-based findings indicated maximum benefit in 48 hours—this drove up LOS and costs, with no real benefit to patient

Pneumonia Mortality Rate

- Mortality Rate on Pneumonia Cases was above national average
- This prompted an additional review of cases to see if they were under-coded, under-documented, or had major complications to explain mortality rates
- Many cases did not have MD documentation to reflect the severity or even get the patient into the complex Respiratory DRGs—coded to Pneumonia, unspecified (J18.9)
- Many had Sepsis clinical indicators but no clear MD documentation—should have prompted an MD query by CDI or Coders but weren’t queried
Benefits from the Hospital Project

- Several cases were re-billed
- MD involvement allowed Hospital to change Hip Joint supplier (#1 DRG) and saved many $$$
- Revised the Natrecor drip protocol for CHF patients to 48 hrs or less to get pt over the crisis, then put on less costly drug
- Evaluating multiple Consults being ordered during IP stays
- CHF Clinic was effectively preventing readmissions but was stopped—need to evaluate the cost of the program vs. the loss of reimbursement for IP CHF Readmissions, especially in light of the Quality Measure

Benefits, cont.

- Practice of Heart Cath patients being admitted on Friday for Monday Cath greatly decreased
- Evaluating Stroke Protocol for patients presenting to ED w/ AMS and education of ED physicians
- The Medical Director began to use the findings to educate the medical staff at Departmental meetings
- The Coders and Case Managers were educated regarding MD queries and developed better understanding & rapport with each other
- Improved efficiency in patient care and improved ratio between costs & reimbursement

Other National Quality Analysis Results

- Review of Postop Days for Open Heart Surgery
  - Increased LOS due to A fib, lack of consistent ambulation
  - Diagrammed the entire process
  - Corrected the problems w/ better treatment of A fib & consistent ambulation
  - Reduction of 53% to 22% that fell outside LOS benchmark for the procedure—$400,000 savings
- Reduction of blood borne infections
  - $450,000 savings due to Supplies, Meds, > ICU beds available, decreased LOS, labor

Data Analytics: A Logical Next Step for Coding Specialists

- To keep quality high with shrinking reimbursement and bundled payments, hospitals must evaluate how efficiently and cost-effectively they provide care
- Coders have knowledge & expertise that can help lead the way in this evaluation of patient care processes & information flow

Adapting To Change

“Change is the law of life. And those who look only to the past or the present are certain to miss the future.”

— John F. Kennedy, June 25, 1963

Questions?

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