My Story: HIM in Data Analytics

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Introduction

- Temple BSHIM ‘10
- Drexel MSHI ‘16
- Working at Lehigh Valley Health Network in Allentown, PA since 2010
- Certified in EMR vendor’s Ambulatory Data Model
- In Austin, TX on 5/24 – but wishes she was at PHIMA with all of you!
Today’s Discussion

• My career path to data analytics
• My responsibilities as a data analyst
• CHDA exam
• Challenges and successes as a HIM professional in data analytics
My Path to Data Analytics

• Transcription Operations Manager
  – 2010 – 2011
  – Used data to analyze operational performance

• Nursing Quality Analyst
  – 2011 – 2014
  – Used data to analyze nursing performance

• Senior Healthcare Data Analyst
  – 2014 – Present
  – Use data to identify improvement opportunities in health care quality and cost from a population health perspective.
Data Requests

• Stakeholders can include management teams, physicians, nurse leaders, executives, etc.

• Requests can be small in scope
  – “Find me all of my patients with diabetes on their problem list” – Primary Care Provider

• ...or larger in scope
  – “I want to improve care for diabetic patients in our health network. Find me information on diabetic patients” – Chief Medical Officer
Capturing Data

• Understand the request and determine where the data exists in the database.
• Write SQL queries that will capture the data at the appropriate level of detail
• Depending on the scope of the request, the SQL queries can range from simple to complex
• The broader the scope, the more complex the query will be
Simple SQL Query

“Find me all of my patients with chronic kidney disease on their problem list” – Primary Care Provider

```sql
SELECT P.PATIENT_NAME
FROM PATIENT P
INNER JOIN PATIENT_PROBLEM_LIST PL
  ON P.PATIENT_ID = PL.PATIENT_ID
WHERE PL.PROB_LIST_DIAGNOSIS = 'Diabetes'
  AND P.PATIENT_PCP = 'Dr. PCP'
```
More Complex SQL Query

“I want to improve care for diabetic patients in our health network. Find me information on diabetic patients” – Chief Medical Officer

```
SELECT *
FROM
(SELECT PATIENT_ID
FROM PATIENT_PROBLEM_LIST
WHERE PROB_LIST_DIAGNOSIS = 'Diabetes')
DIABETES_PATIENTS
INNER JOIN
(SELECT P.PATIENT_ID, P.PATIENT_NAME, P.PATIENT_AGE, P.PATIENT_GENDER, P.PATIENT_PCP,
PCP.PRACTICE_NAME, PE.ENCOUNTER_PROVIDER, PE.ENCOUNTER_PROVIDER_SPECIALTY, PE.ENCOUNTER_DATE,
,PE.DIAGNOSIS, LAB.HBA1C_RESULT,CASE WHEN LAB.HBA1C_RESULT < 9 THEN 'Good' ELSE 'Poor' END AS
"Control Status", ML.MEDICATION
FROM PATIENT P
INNER JOIN PATIENT_ENCOUNTER PE
    ON P.PATIENT_ID = PE.PATIENT_ID
LEFT JOIN PROVIDER PCP
    ON P.PATIENT_PCP_ID = PCP.PROVIDER_ID
LEFT JOIN LAB_RESULTS LAB
    ON P.PATIENT_ID = LAB.PATIENT_ID
    AND PE.ENCOUNTER_ID = LAB.ENCOUNTER_ID
LEFT JOIN MEDICATION_LIST ML
    ON P.PATIENT_ID = ML.PATIENT_ID
    AND PE.ENCOUNTER_ID = ML.RELATED_ENCOUNTER_ID
    AND ML.ACTIVE_STATUS = 'Yes'
ON DIABETES_PATIENTS.PATIENT_ID = PATIENT_DETAIL.PATIENT_ID
```
Displaying data

• Determine the appropriate data display for the request
  – “What percent of patients...”
    • Pie chart
  – “Show me hospital admission rates over the last 2 years”
    • Line graph displaying admission rates per each month in timeframe
  – “What are the most commonly prescribed medications?”
    • Bar chart showing frequency distribution by medication class
Analyzing and Interpreting Data

Patients with Mood Disorders and Chronic Conditions

- 28% Chronic Kidney Disease
- 14% Diabetes
- 25% Congestive Heart Failure
- 19% Arthritis/Rheumatism
- 11% Asthma
- 3% No Chronic Condition
Analyzing and Interpreting Data

• Analysis
  – “What am I seeing?”
    • 3% of patients with mood disorders have no chronic condition

• Interpretation
  – “What does this mean?”
    • The majority of patients presenting with mood disorders have other chronic conditions. Poor management of the chronic conditions could possibly be contributing to the mood disorder.

• Follow up questions will typically lead to a new request, and the data analytics cycle continues
CHDA Credential

• Exam Domains
  – Data Management (32%)
    • Structure and design of relational databases
    • Syntax for basic SQL queries
  – Data Reporting (31%)
    • Data display methods
    • Determining target audiences
  – Data Analytics (37%)
    • Interpreting results
    • Basic descriptive and inferential statistics
Current Challenges to HIM in Data Analytics

• Employers are looking for advanced database management and querying skills

• Computer science, mathematics, and engineering backgrounds are often considered for data analyst roles

• HIM has the foundational knowledge of database concepts, but may need additional practice and experience to develop the level of skill by employers
Successes for HIM in Data Analytics

- CHDA credential recognizes HIM skill and talent in data analytics
- Knowledge of clinical documentation, coding, and reimbursement methods makes HIM better analysts of health information
Other Suggestions for HIM

• Have an HIM “elevator speech” and explain why it is relevant for data analytics
• Get certified in your organization’s EMR data model
• Determine how we differentiate our profession from other “data-centric” disciplines
HIM’s Past

What was once this...
HIM’s Reality

...is now this
Journal of AHIMA, May 2016

• “HIM’s Professional Shake-Up Wake-UP” – MUST READ

• “HIM Reimagined” – new roles for HIM to stay relevant in changing health care environment