



206-478-8227
www.healthdataconsulting.com

Data Value

Breaking Old Habits

Joseph C Nichols MD
Principal

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TABLE OF CONTENTS

THE VALUE OF DATA	3
BAD DATA HABITS.....	3
ICD-10: THE MAGIC BULLET?	6
THE GOOD NEWS	6
SUMMARY	7



The Value of Data

No one would disagree that data provides value to any business enterprise. Without data, anything we do is based on inference and conjecture with little evidence to support decisions. Most industries have not only recognized the value of data about their enterprise domain, they know that the quality, accuracy and completeness of data for every transaction is critical to survivability. Most industries cannot tolerate incomplete, inaccurate and inconsistent data. Collection of high value data is a critical operational mandate.

Data about patients' health conditions are essential to good care. For physicians, medical school taught us that understanding all of the data parameters about the patient's health state is critical to making wise decisions to improve or maintain their health status. What we didn't learn, was the value of capturing those parameters in a complete, consistent and standard way. Without a consistent commitment to capturing data that is complete, accurate and standard, we cannot expect to get information about healthcare that can be used to understand:

- Patterns of illness and changes in those patterns
- The risk and severity of disease in a population
- The value of health care in terms of outcome and experience of care
- Causes of diseases and injuries that could be mitigated
- The effectiveness of policies to improve healthcare value

Ironically, healthcare seems to be the one industry where data collected on healthcare transactions is often considered an administrative burden. Unlike other industries, data quality is not considered a key focus of healthcare transactions. As long as payment occurs, there has been little focus on the level of accuracy and completeness of that data.

The potential for the use of transactional data to understand healthcare across all healthcare enterprises is immense, if we could just trust it. Unfortunately we often use this data to make assumptions and decisions that simply can't be supported based on a better understanding of the quality of the data we have.

Bad Data Habits

An analysis of historical data illustrates some of the challenges we face in using data to understand healthcare conditions. The following are two condition examples based on an analysis of 3 years of payer data that represented nearly 10 billion dollars in charges.



Breast Cancer:

Virtually every patient treated with breast cancer has one or more transactions for services delivered. These transactions provide the opportunity to capture data about the nature and location within the breast of these lesions. There may be value in understanding cost, outcomes, risk and a variety of other information on a population wide basis about the variations of this disease. If we look at historical patterns, we see that while there is the ability to capture this detail, it is rare that data includes these parameters on any consistent basis. The graph below is based on historical ICD-9 data. ICD-10 provides the ability to collect even greater detail about the location and type of breast cancer. While some providers may capture these parameters, the large majority of providers have simply captured something far less specific.

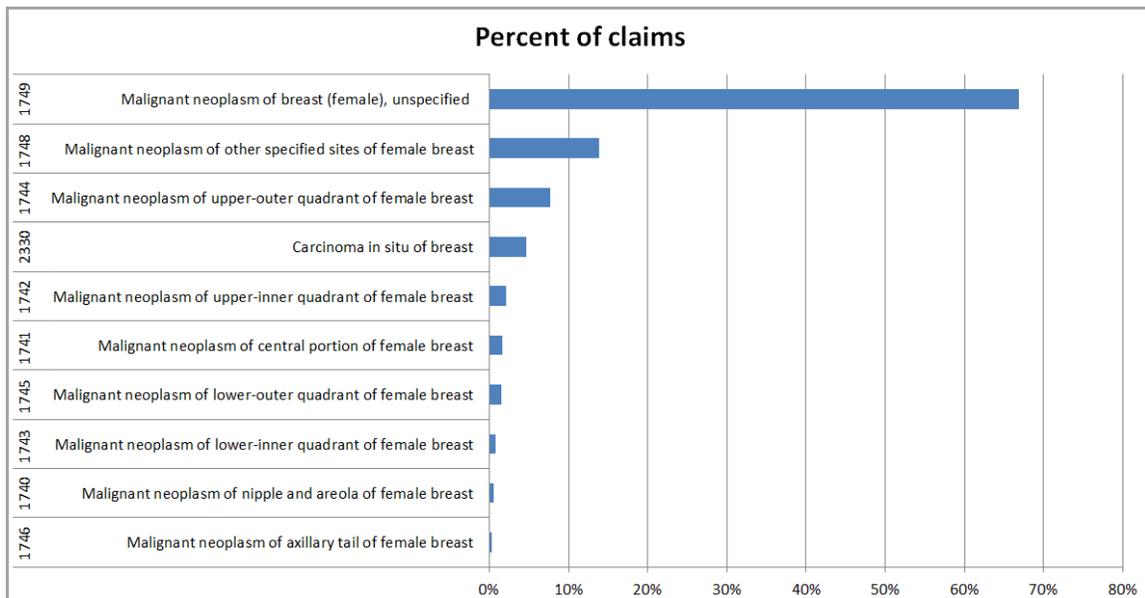


Fig 1¹

The only data we can rely on is at a level that loses a great deal of potential value. The specificity of the few is lost in the vagueness of the majority.

¹ Based on a Health Data Consulting analysis of 3 years of payer data, all lines of business



Cardiac Dysrhythmias

A similar finding is seen when looking at cardiac rhythm disorders. It is generally accepted that atrial fibrillation is the most common type of cardiac rhythm disorder. It would be extremely valuable to have a better understanding of the costs, risks, demographics, outcomes and other parameters of this disease across all health care enterprises and population based on large population data sets. Unfortunately when we look at this data, the quality and specificity is such that we really don't know what types of rhythm disorders are being treated with any level of reliability.

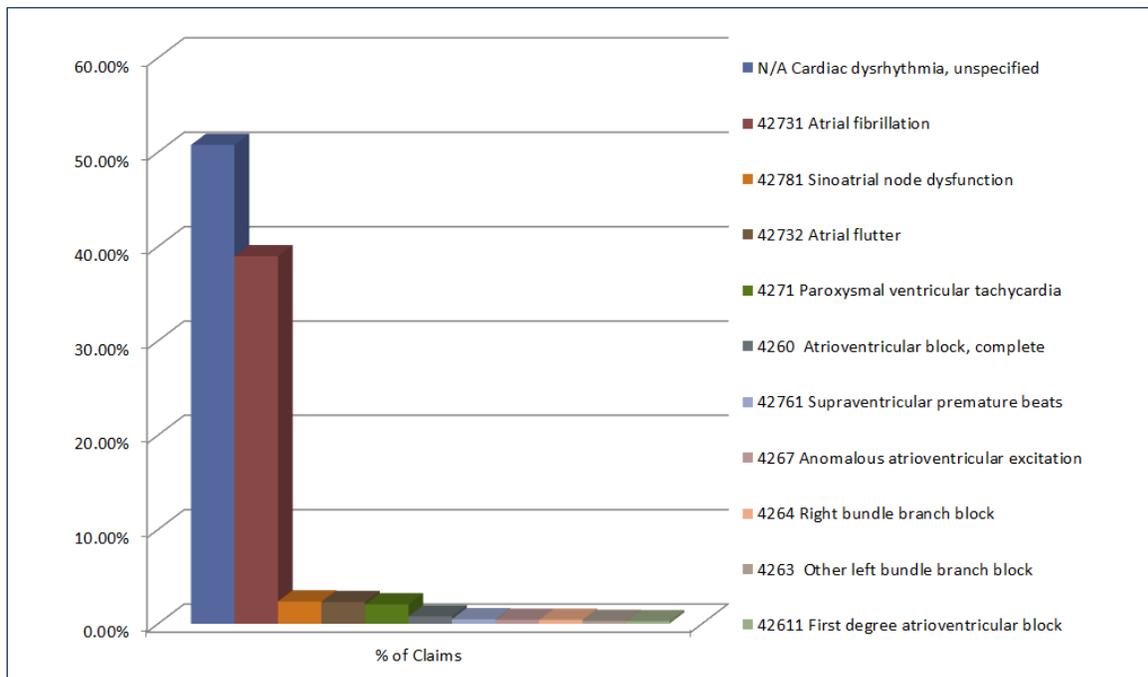


Fig 2²

As seen in Figure 2, while atrial fibrillation appears to be the most common specifically reported type of arrhythmia, nearly 50% of all transactions are at a less specific level³ of reporting that makes it impossible to tell if the transactions was or was not related to atrial fibrillation. Any report on incidence, cost, outcomes or other analysis of this transactional data about atrial fibrillation could be off by a large percentage. If we try to get at the value of ablation procedures for atrial fibrillation based on this data, we might be missing the majority of the cases in that analysis.

² Based on a Health Data Consulting analysis of 3 years of payer data, all lines of business

³ Transactions where the primary code is at a level of specificity that the condition may or may not have been atrial fibrillation



ICD-10: The Magic Bullet?

There seems to be a belief that the move to ICD-10 will address many of the issues of data quality and specificity, but those who understand ICD-10 know that we can be just as vague in ICD-10 as we were in ICD-9. We have always had the opportunity to be more specific in ICD-9, but rarely have we taken that opportunity. While there is no doubt that an improvement in data specificity can have a profound impact on data value, until the majority of providers submitting these transactions buy into the value of specific definition of their patients' health state, the promised advantages of the ICD-10 standard change will be lost.

The Good News

While there are significant challenges historically with data, there are some strategies⁴ to improving data quality that are evolving.

1. The trend towards “population health” is adding a new focus to large transactional data sets
2. Bundled payment and episode based models require better data definition
3. Quality and outcome measures require a better definition of the risk, severity and complexity of the patients health status
4. There is a greater focus on disease surveillance about the safety and health of the population
5. Payment that adjusts for risk severity, complexity, case mix and other parameters makes the definition of the level of illness and comorbid conditions critical

⁴ <http://www.himss.org/ResourceLibrary/genResourceDetailPDF.aspx?ItemNumber=44828>



Summary

Historically we have had a habit of poor quality data collection across all standard healthcare transactions as compared to nearly any other industry. The lack of consistency, accuracy and completeness of data about the patient health state has had a crippling effect on the value of information that we can derive from these universal transactions. Rapidly changing payment methodologies and an evolving value based, data driven environment may be a change agent for undoing these bad habits. ICD-10 is not a magic bullet. ICD-10 provides the opportunity to capture much greater specificity about the nature of the patient's condition. Unless the data submitter sees the need for this greater specificity however, we may see little if any change in the reliability of the data we use to drive the healthcare direction.