

HIGH VELOCITY ANALYTICS TO IMPROVE OUTCOMES


SPEED TO DATA=SPEED TO OUTCOME

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GOALS AND OBJECTIVES

- What is Velocity?
 - What does Velocity look like?
 - How does Velocity effect a data cycle?
 - What are some of the barriers to Data?
 - How can we overcome those barriers?
 - How can Velocity effect outcomes?
 - Case studies on Data outcomes
 - How can meaningful integration assist with making meaningful decisions
 - Questions
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VELOCITY

Velocity is closely related to speed. For people who are not specialists, the use of the word "speed" to explain how fast something is moving is normally sufficient. The term velocity is used by physicists when certain problems arise with the use of the term speed.

The big difference can be noticed when we consider movement around a circle. When something moves in a circle and returns to its starting point its average velocity is zero but its average speed is found by dividing the circumference of the circle by the time taken to move around the circle. This is because velocity is calculated by only considering the displacement between the starting and the end points while speed considers only the total distance traveled.



WHAT ARE DATA ANALYTICS

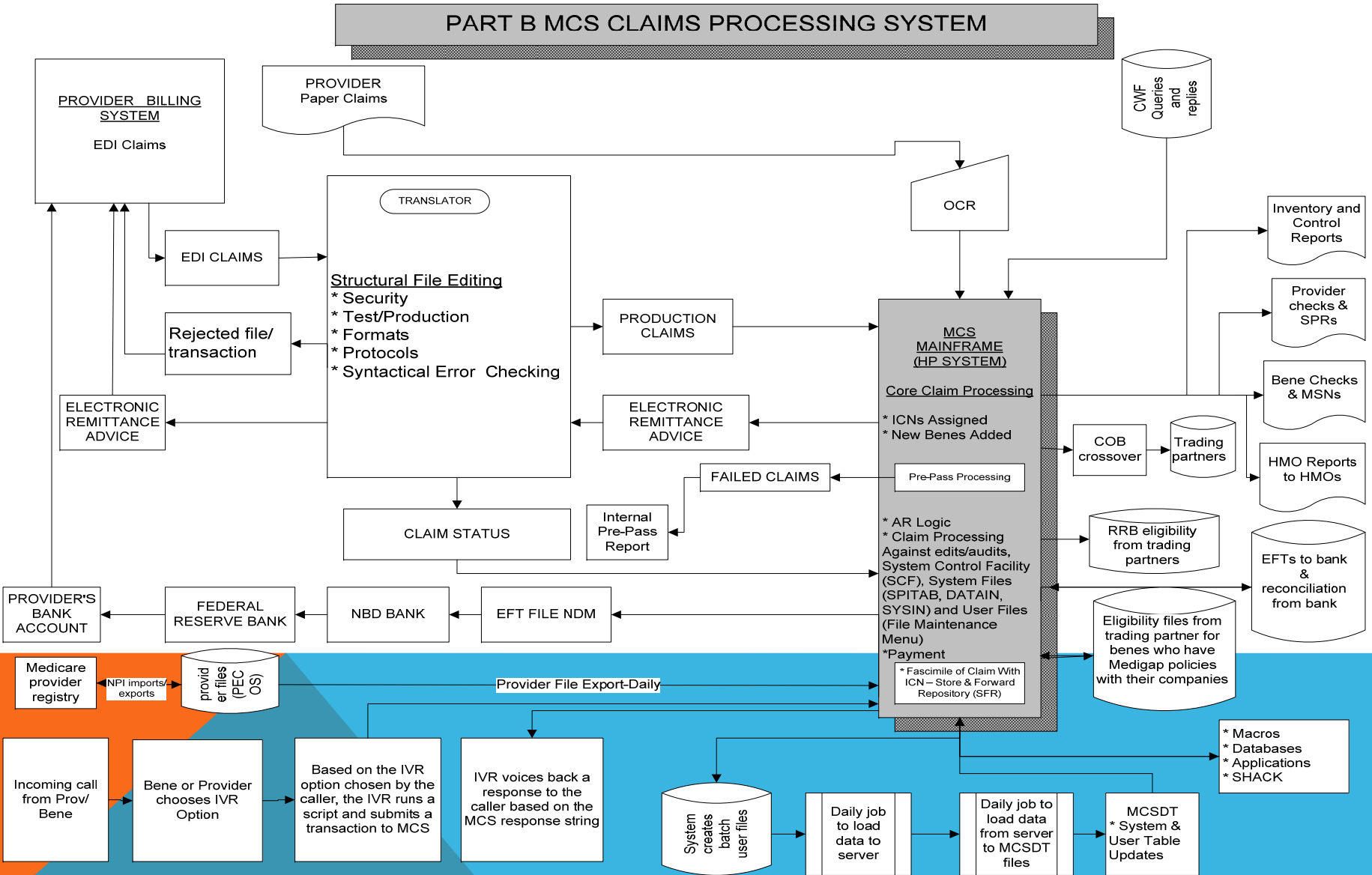
Analysis of data is a process of inspecting, cleaning, transforming, and modeling data with the goal of discovering useful information, suggesting conclusions, and supporting decision making. Data analysis has multiple facets and approaches, encompassing diverse techniques under a variety of names, in different business, science, and social science domains.

Data mining is a particular data analysis technique that focuses on modeling and knowledge discovery for predictive rather than purely descriptive purposes. Business intelligence covers data analysis that relies heavily on aggregation, focusing on business information. In statistical applications, some people divide data analysis into descriptive statistics, exploratory data analysis (EDA), and confirmatory data analysis (CDA). EDA focuses on discovering new features in the data and CDA on confirming or falsifying existing hypotheses. Predictive analytics focuses on application of statistical or structural models for predictive forecasting or classification, while text analytics applies statistical, linguistic, and structural techniques to extract and classify information from textual sources, a species of unstructured data. All are varieties of data analysis.

Data integration is a precursor to data analysis, and data analysis is closely linked to data visualization and data dissemination. The term *data analysis* is sometimes used as a synonym for data modeling.



COMPLEX DATA FLOW



BARRIERS TO VELOCITY – DATA COLLECTION

Data is plentiful. Getting maximum use from the data can be challenging

Ability to data mine “Big Data” creates high IT investments

Ability to cross purpose data can be difficult

Multiple stakeholders of data create multiple demands

Industry transition from transactional to data outcome focused is key

The increase in data aggregation and analysis, and the need for that data to be transformed into actionable information will require new training and skills in health IT,I including clinical informatics

Data may not be transparent to the end user. More data is not always better if there is not a connection to each event.



HOW HAS DATA SUPPORTED MEDICARE'S FRAUD, WASTE AND ABUSE EFFORTS

Predictive Analytics, Link Analysis, Rules and complex mapping has turned Medicare's Fraud Waste and Abuse System from a Pay and Chase Model into a Pre Payment Model

Medicare Fee For Service processes Approx. 5 million claims a day thru it's Fraud Prevention System in a real time data streaming process

In September 2013, Medicare Fee for Service Fraud Prevention System alerted on \$244 M dollars in potential Fraud, Waste and Abuse

Medicare's Fraud Prevention System integrates the Integrated Data Repository (IDR), PECOS, Shared Systems Data Feed, CWF (Common Working File) into one common environment

Medicare's User Interface allows for Zone Program Integrity Contractors to view actionable data that allows for rapid intervention and swift actions up to and including revocation of licensure.

CASE STUDY ON HOW SPEED TO INTERVENTION CAN SAVE DOLLARS AND INCREASE PRODUCTIVITY IN A MEDICARE AUDIT CONTRACTOR (MAC)

Can Algorithms be utilized for more than just Fraud, Waste and Abuse Detection?

Can Models be dynamic enough to allow for simple change in dynamics to allow for ability to detect anomalies to allow for early intervention?

Can early intervention really save time, money and allow for Medicare Audit Contractors to do more within their current ecosystem?

Can a system designed and build for a single purpose really be able to produce dynamic results that can trigger automated responses?

Will the old mindset of mining data 9-12 months after an event has occurred be able to switch to one that is open to new ways and use of more dynamic data?

Can data at a simple level tell a truly complex story?



MEDICARE AUDIT CONTRACTOR CASE STUDY

Background:

In a standard chart audit review, it was determined that a chiropractor had been billing and paid with codes that indicated the provider was billing for more than standard time in a day, more than standard time in a month and was also billing for code combinations that were not within the standard guidelines.

In a 90 day study it was detected that more than \$16,900 had been paid to this provider.

This provider over the past year had been paid more than \$100,000.

Issue was detected only thru a complex chart audit that cost the MAC more than \$3500 to perform and was on data that was more than 6 months old.

Quest – To utilize data in a more rapid timeframe that would allow for detection, intervention and tracking all the while reducing costly manual, onsite post payment audits.



DATA VELOCITY PILOT

Thru the Fraud Prevention System, a standard Chiropractor Algorithm was tailored to alert at a lower threshold on streaming data – Standard for Fraud detection was 15 claims within a 30 day period of time

The MAC level 1 was set at 3 claims in a 30 day period of time.

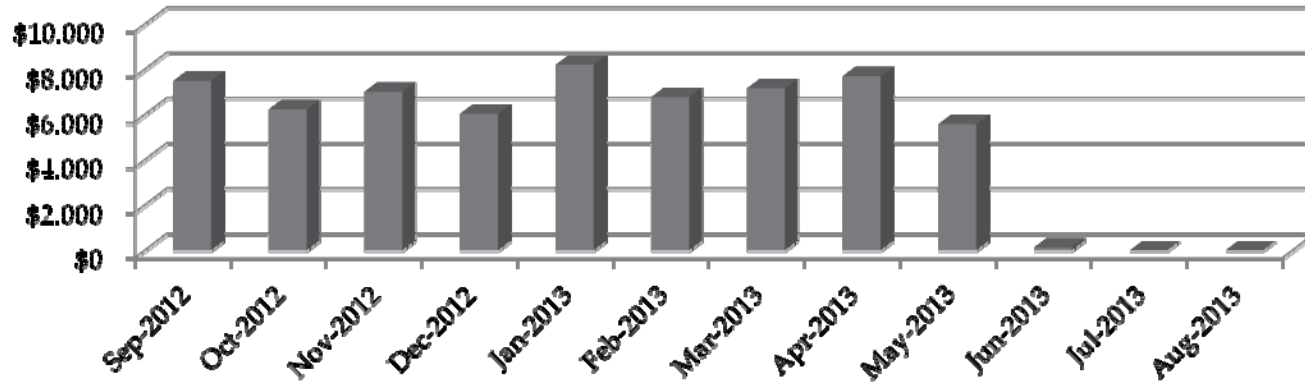
At the point of reaching the level 1 threshold a call was placed to the provider.

Provider was monitored over the next 90 days after intervention to determine any behavioral changes.

If changes were made what were the benefits to the MAC, Provider and the Program?

GRAPH OF PAYMENTS FOR SELECTED PROVIDER

Total Payment By Date of Service Month For NPI



	Sep-2012	Oct-2012	Nov-2012	Dec-2012	Jan-2013	Feb-2013	Mar-2013	Apr-2013	May-2013	Jun-2013	Jul-2013	Aug-2013
Total Payment	\$7,495	\$6,243	\$7,019	\$6,044	\$8,214	\$6,786	\$7,168	\$7,707	\$5,586	\$135	\$0	\$0

■ Total Payment

BENEFIT/SAVINGS TO THE MAC

Average 40 claim probe review cost MAC's \$2,373.00 not including support services (BSO, M&D) Cost \$94,920

4 hours of analysis, review of provider billing and teleconference with a cost of \$300.00

Allows MAC's to effectively deploy resources to complete more reviews

Effect change within a couple of weeks and decrease length of time of improper billing and payment

Reduce CERT error rate through immediate identification and intervention

Reduces pay and chase process

Savings to the MAC – Cost of Audit \$2,373 - Cost of Streaming Date \$300 = Saving to Program on 1 Provider Probe \$2070 of Human Capital + \$94.920 in inappropriate payments = $\$96,990 \times 40 = \$3,879,600$

SAVINGS TO THE PROVIDER

Eliminates the cost and effort of copying and sending medical records

Avoids suspension of claims and delayed payments

Reduces overpayment recovery

Provides more effective one on one focused education

Allowed Provider to continue participation in program



HOW CAN MEANINGFUL INTEGRATION WITH VELOCITY OF DATA ASSIST WITH MAKING MEANINGFUL DECISIONS

- Speed of data can equal speed of decisions
- High quality meaningful data equals interventions that can create rapid change in behavior or protect the program from Fraud, Waste or Abuse
- Quality data has a big impact on quality outcomes
- Ability to understand complex data analysis through meaningful results can result in early detection and intervention

