Intelligent Medical Management:

Transforming Big Data into Applied Analytics

genex

OUTCOMES

STRATEGY

CONTROL

REDUCE COSTS

BIG DATA

DASHBOARDS

ANALYTICS

PREDICT TRENDS

ACTIONABLE

CUSTOMIZATION

Overview

Over the past few years, Big Data has captured the interest of the nation's top business leaders. Details, patterns and trends ranging from consumers' buying habits, entertainment preferences, online search habits, and even health care profiles are now accessible by virtually any entity — from marketers, to the government, to current and prospective employers. All of that data can be used to sell products, predict trends and change behaviors; it's a virtual goldmine of opportunistic information.

Organizations seeking new strategies to improve workers' compensation programs are also beginning to explore the concept of Big Data. They are examining the potential of Big Data to become a strategic initiative to increase control over variables ranging from injury frequency and severity, to quality of care and return-to-work outcomes.

Businesses, TPAs and insurers, however, are finding there's been a lot of talk about Big Data but not much action. Creating a Big Data system that offers truly *actionable* analytics begins with asking critical questions, including:

- What defines Big Data in workers' compensation?

- How is it being used today?

- What information should Big Data explore?

- What concerns and issues should be addressed before embarking on a Big Data strategy?

And most importantly...

- What are the best practices for turning Big Data into actionable decisions?

In short, having Big Data is not the proverbial silver bullet for improved workers' compensation program results. There is still much work to be done for this opportunity to achieve its potential.

Defining Big Data for Comp: The Small Village in the Big Data World

One challenge to the effective incorporation of Big Data into business solutions for workers' compensation is the lack of a consistent definition of what it is and is not. *Forbes* magazine recognized the many different definitions of Big Data and recently published a succinct explanation: "Big Data is a collection of information from traditional and digital sources inside and outside your company that represents a source for ongoing discovery and analysis."[1]

However, that definition doesn't define the type of actionable decisions that Big Data can and should generate for workers' compensation.

Historically, the workers' compensation industry has been the small village in the global Big Data world. What's more, it is a village that has been data poor. Therefore, what Big Data should be in workers' compensation is...

> *a sound business strategy that integrates business intelligence with key performance indicators to continually improve programs, resulting in an overall reduction in the cost of risk associated with workers' compensation risk.*

What are the Benefits of Big Data in Workers' Compensation?

Big Data should provide the ends and the means. In combination with data modeling, dashboards, information tools, and analytics, companies can look at information on medical spend, utilization trends, injury patterns, wellness and employee assistance programs, variations among different geographic regions, and even group health statistics to identify trends, correlations, coverage redundancies, and areas needing immediate attention.

For example, clinical research (and even product warning labels), clearly caution against operating heavy machinery while on anti-depressants and anxiety medications. When workers' compensation managers are aware of such prescriptions on the group health side, and especially if prescribed for a comp injury, they could intervene and identify alternative work arrangements for employees taking these medications.

When Big Data is applied as part of a forensic exercise in compliance and safety programs, it provides greater control over claim prevention and losses. Consider the fact that a marked percentage of commercial truck drivers are at risk for obstructive sleep apnea (OSA);
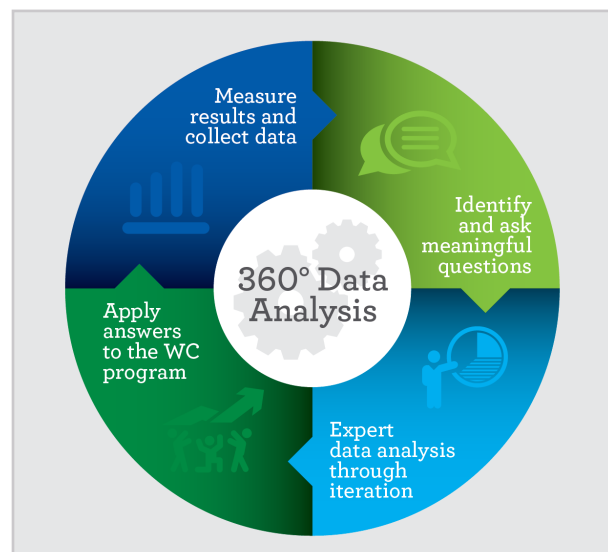
yet few are screened. Truck drivers with sleep apnea have up to a sevenfold increased risk of being involved in a motor vehicle crash.[2] Providers who are aware of the importance of driver health would know of the need to check for medical conditions such as sleep apnea. Once aware of that need, the employer could work with the provider to ensure the employee had access to a C-PAP machine or at the least, education for improved sleep hygiene. Used in such a manner, Big Data provide the opportunity to prevent or mitigate loss and to gain a broader view of employees' safety issues.

Challenges of Big Data

The Wall Street Journal recently published an excellent analysis of the problems of Big Data, many of which directly apply to workers' compensation. Issues of concern include how to:

- Identify what data are relevant

- Recruit Subject Matter Experts (SMEs) to pinpoint and provide insights

- Integrate data across systems and platforms both within and outside of workers' compensation programs

- Develop the technology and infrastructure to collect, analyze and report[3]

It is because of these very factors that the true incorporation of Big Data in workers' compensation remains costly and difficult. Employee, group health, claims, managed care and pharmacy are typically each in different systems, where data are difficult to access, let alone integrate. Siloed analytics and services are typical in many companies, and such silos prevent or-

ganizations from bringing the two together. Therefore, the true value cannot be seen until they are combined. Once they are combined, the analytics then can be used to inform the customization of services.

It's not enough to look at simple patterns or trends; it takes robust technology and industry veterans who can put that data into context and pull out the insights that can lead to service modifications, workflow changes, and more.

What is essential for the effective utilization of Big Data in workers' compensation is a multi-dimensional view of all the data associated with a claim that can be sifted in a way that filters out the "noise." Noise can include anything from poorly collected or incomplete data to outlier claims, to anomalies created by work-flows or regulatory mandates.

In fact, it is the analysis component of Big Data that is perhaps the single most important component for effective workers' compensation programs. The best data analysis tools provide a "Rubik's Cube"-type approach — one that provides a multi-dimensional view, so that all the data associated with a claim can be scrutinized in a manner that makes sense for the business.

Consider this...a cursory look at trends showing a decrease in claims cost may have an employer pointing toward newly implemented programs such as discounts or tighter utilization management. However, an experienced workers' compensation expert could look at that same data and note that the decrease in trend is actually due to new state fee schedules.

Big Data: A Real World Example

One of the most important areas where Big Data can be applied is in provider network development. A key differentiator between a good workers' compensation program and a superior one is the caliber of providers in the network. Better results are achieved by those providers with training and experience in the types of injuries seen most often by an employer and with a proven track record of superior outcomes.

While most workers' compensation programs claim to have some solution for the identification of top providers, few have the volume of statistically relevant data and ongoing data analysis to identify those top providers by industry and region.
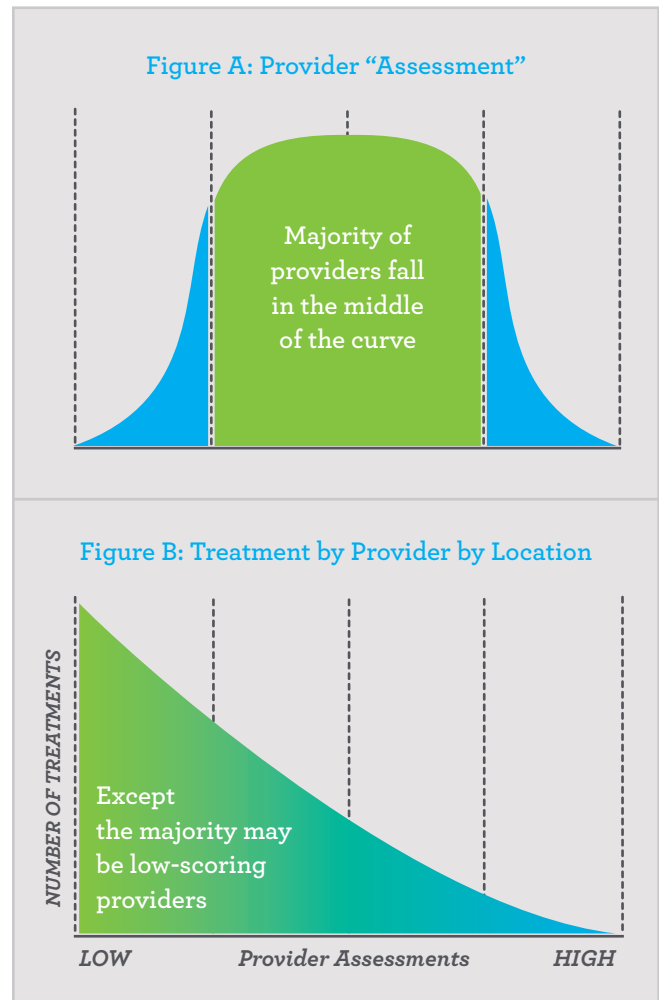
Even fewer vendors can show employers the impact that higher quality providers can have on the overall program in terms of outcomes, cost and return to work. Indeed, the traditional approach of most TPAs or program managers is to focus on discounts and

utilization review to deny treatment. The questions not being asked are:

- How is the network improving itself?

- How is it continually analyzing provider performance, collaborating with providers to gain insights and communicating findings regarding optimal treatment protocols, identifying road blocks to return to work (e.g., delays in notification), and examining not just outliers, but reasons for the outliers?

- And most importantly, how is the program ensuring injured workers get to those top providers?

Utilizing the best providers in the network must become a key goal for employers. *An analysis of large employer utilization patterns shows that in about one-third of cases, the best providers in the network are not being utilized by injured workers.*[4]

The typical graphic distribution of quantitative provider assessments is a bell curve. However, if you use Big

Figure A: Provider "Assessment"

Majority of providers fall in the middle of the curve

Figure B: Treatment by Provider by Location

NUMBER OF TREATMENTS

Except the majority may be low-scoring providers

LOW   Provider Assessments   HIGH

Data to look more granularly at treatments by provider by location, you may find that at any given location, a disproportionate number of treatments are going to low-scoring providers. You would then use your provider, treatment, and outcome data along with qualitative inputs from nurse case managers, adjusters, and even claimants to better evaluate, identify, and direct care to the best providers.

The Benefits of Applying Analytics to Data

Businesses that embark on a comprehensive approach to data analysis — to utilizing their Big Data — and more importantly implement a plan of action will achieve:

- Frequent (quarterly at a minimum, perhaps monthly) visibility into injury and medical spend trends that identifies key performance indicators (KPIs) and cost drivers
- Conclusions on how the program is performing from an industry SME on a quarterly basis
- Actionable recommendations to improve performance
- Ongoing commitment to implement changes in their workers' compensation programs and measure results
- Annual comprehensive review of program results against benchmarks in previous years

Turning Data into Action

Big Data is still in its infancy. There is a temptation to latch on to the term and use it as a marketing tool, rather than a sound business strategy. In addition, there are still important and complex issues, such as employee privacy, to be addressed.

However, the potential of Big Data is far too promising to ignore. Businesses can gain significant insights into workers' compensation programs, including what is and isn't working, provider network performance, opportunities for synergies with other programs, and more. The key is to ensure the organization has the technology, resources and expertise to use data and analytics as a sound business strategy to improve performance, manage costs and ensure the safe and rapid return to work of injured employees.

7 Steps to Creating Actionable Analytics with Big Data

Virtually any organization today can generate data — the key is in the expert analysis, practical application and provision of specific guidance on how to use it. To achieve the goal of actionable analytics from Big Data, sponsors of workers' compensation programs should consider the following:

1 Know your work comp program. How many employees use it in a given year; for what injuries; for what length of time, in what locations, etc.?

2 Identify data to be gathered such as claims history, provider network data, return-to-work trends and medical costs.

3 Ensure the organization has access to the right technology and tools to collect, analyze and report findings. Building such infrastructure can be costly. Consider partnering with industry experts to provide the technology and expertise to maximize the benefits of Big Data.

4 Collaborate across silos within the company to secure access to all relevant data and collaboration among teams.

5 Leverage industry and peer benchmarks to create more focused programs and to measure improvement and set new standards.

6 Ensure a subject matter expert, an internal or external vendor, is specifically tasked with obsessing over — or continually analyzing — the data to identify the trends and patterns that are relevant while ignoring the noise.

7 Make sure the key findings are incorporated into the workers' comp program so that the impact can be measured and continually refined.

Siloed analytics and services are an important advancement, but the true value cannot be seen until they are brought together and the applied analytics are used to inform the customization of services.

Genex Services and Big Data

While there is still much to be done to fully realize the benefits of Big Data in workers' compensation, a few industry leaders do provide the resources, technology and applications to make it a strategic advantage. At the forefront of Big Data innovations is Genex Services (http://www.genexservices.com). The company provides insurers, employers, and third party administrators with a broad array of managed care solutions and information management capabilities through its more than 2,900 employees and more than 47 service locations throughout North America. The company has a demonstrated ability to help clients manage and control the medical, wage loss, and productivity costs associated with claims in the workers' compensation, disability, automobile, and health care systems. Genex services include utilization management, case management, medical bill review, preferred provider organizations, specialty networks, Social Security representation, information management, Medicare Set-Aside, and related capabilities.

With some of the most advanced technology in the workers' compensation arena, Genex is uniquely qualified to provide the analytic tools, expert analysis, and action plans employers today need to gain the maximum value from the incorporation of Big Data into their workers' compensation programs.

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