WorkersComp ANALYTICS Positively Impacting Claim Outcomes TM

EXECUTIVE UPDATE: WC Claim Predictive Modeling

MMXI/IV_II

1. More Data = Better Segmentation
2. Better Segmentation = Early Identification
3. Early Identification = Big Savings/Service Value

> "If you can look into the seeds of time,
> And say which grain will grow and which will not;
> Speak then to me.
>
> William Shakespeare, Macbeth, Act I, Sc. 3, L. 58

Wouldn't it be nice to…

- know the outcome of a claim on the day it was reported?
- provide accurate, deserved, and timely benefits to an injured worker?
- assign a claim to an adjuster who can effectively and efficiently handle it, thus positively impacting client loss ratios as well as your internal claim leakage?

These are all seeds that can grow to impact claim outcomes, but are they the seeds of weeds or flowers?

For the past decade, the casualty market has been using predictive modeling in underwriting as a basis for effective segmentation of risks and for pricing guidance in renewal/non-renewal decisions.

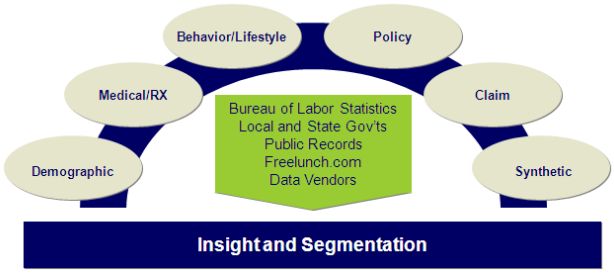
Effective application of a basic underwriting predictive model can positively impact a workers' compensation loss ratio by 5% to 10%. In the underwriting modeling scenario, the model takes a snapshot of a given risk, typically 90 days before renewal. That snapshot is an annual prediction of a loss ratio given all the appropriate variables at hand.

In the area of workers comp claims, predictive modeling is not as easy or straightforward. Though similar in concept, a worker's comp claims model attempts to predict a snapshot of loss ratio on a weekly or even daily basis. This fact alone adds multiple layers of complexity to the development and implementation of a model. It also makes it more difficult to understand the loss improvement in terms of earlier return to work. This implies better use of a medical network, better case-management expertise and better decisions by doctors, adjusters, employers, and the injured person.

A workers comp claim model can provide value to all parties and result in better outcomes for thousands of injured employees. Employers and carriers will see an immediate impact on loss ratios and carriers will have the added benefit of better control of their unallocated loss adjustment expenses, including salaries, overhead, and other related adjustment costs not specifically allocated to the expense incurred for a particular claim.

1 More Data = Better Segmentation

Effective workers comp claim models use various and disparate sources of data to develop useful segmentation. The first level of data constitutes the actual claim transactions of a given carrier or industry group. This data should include bill review results, as well as adjuster and physician notes. A second level of data includes public records data sources of the claimant, medical provider, and employer. For example, this data can include household level detail and motor vehicle reports. A third level includes census level data and its derivatives. And finally, a fourth level includes weather data.



Oft overlooked is the development and use of synthetic variables. These are variables made from a combination of one or more data elements. For instance, a common synthetic variable is a distance measure, i.e., how far a person lives from their physician, attorney or work location.

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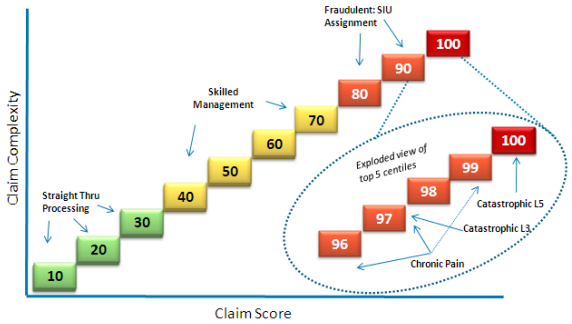
2 Better Segmentation = Early Identification

The goal of any modeling effort is to separate the wheat from the chaff. In the example below, cases generating a score from the algorithmic model are broken into 10 scoring ranges so that pre-determined actions can be



taken on the cases. For instance, cases with lower scores need very little intervention, while cases with higher scores need specific and technical assignments.

An exploded view of the top five percentiles presents a deeper look at specific injury types. As an example, even though a catastrophic injury is known at the outset, there are many levels within such a claim that can impact the outcome. Detailed segmentation can be designed for any grouping.

Scores are Silent!

Scores merely serve as a method for segmentation and grouping. Communication to the adjuster and field staff should center on claim strategies that are based upon the leading drivers of the case. In many instances, a co-morbid condition could be associated with a more complex claim. That identification would require additional expertise for both claim and medical coordination. Another extenuating circumstance might be the distance that an employee lives from a medical provider. In such cases, an old fashioned "house call" might be the needed action.

These leading drivers open a host of potential strategies to resolve a case and call upon the clam expertise of the organization.

Business Rules Engines that Work

Now with the ability to use specific drivers, business rules can be developed that do the following.

- Evaluate the medical and occupational situation of each claimant
- Maintain consistency and quality in claims handling
- Communicate effectively with employers, medical providers, and injured employees
- Develop the optimal return-to-work (RTW) plan

3 Early Identification = Big Savings/Service Value

Predictive models can identify cost drivers and other factors influencing the outcome of claims and produce actionable information users can employ to produce savings on many levels.

Types of Models

1. *Company-specific model* – based on the actual underwriting and claim-handling results of your company. It requires a very large claim volume of 100,000 or more.
2. *Industry-based model* –can produce highly accurate results with aggregated claim transaction data from various carriers, third-party administrators or large self insurers.

Specific Target Models

1. *Claims Complexity Model* – identifies the primary drivers of a particular claim and affords the greatest reach into understanding a claimant's prospective outcome.
2. *Fraud-Only Model* – identifies certain types of fraudulent behavior. Is excellent for understanding and examining provider payment patterns.
3. *Subrogation-Only Model* – identifies additional cases that may be subject to hidden recovery-based information.
4. *Nurse Case Management Model* – identifies the right time to assign a nurse case manager. Proper timing can positively impact return-to-work and medical costs.
5. *Medical Reserve Model* – identifies escalating drivers of medical costs and helps predict the outstanding costs.
6. *Catastrophic Chronic Pain* – identifies which cases will cross the threshold of catastrophic chronic pain, offering more opportunity for management and timely notification.

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