

# Predictive Modeling Improves Claim Outcomes While Lowering Costs

**A** young mechanic injures his back while tripping over a hydraulic lift at his employer's auto body shop. On the surface, the claim appears to be a typical back injury claim. However, lurking in the background is a confluence of complicating factors involving the injured worker's personal characteristics, prescription regimen and treatment pattern, which could create a volatile claim. Through the use of sophisticated analytics tools, the employer's insurer identifies this claim's potential for volatility and quickly assigns the claim to an elite team of medical professionals.

The worker is directed to a top-tier treatment facility, where he receives an appropriate surgical intervention, the right level of care and prescription medications. As a result, the worker is able to recover from a potentially disabling injury and return to his full duty role as a mechanic.

The use of predictive analytics to identify the non-obvious factors that can improve claim outcomes is an increasing area of focus for leading insurers such as The Hartford.

Predictive analytics can be defined as the use of statistical modeling to look at the various characteristics of a claim — the policy, claimant, loss and treatment plan, among others, as well as environmental factors and time periods — and assigning a "score" to each claim.

While historically the insurance industry has focused its use of predictive modeling on rate-making and other premium areas, that is changing rapidly with the use of proven techniques and broad application within claims.

"We use this type of data analysis and statistical modeling to identify claims that have the potential to become very large, but on the surface, may not seem high-cost or catastrophic," explained John Kinney, The Hartford's chief claim officer. "This insight helps drive decisions about how best to handle these claims."

## "PREDICTIVE ANALYTICS CAN HAVE A MEANINGFUL IMPACT FOR OUR CLIENTS IN DRIVING DOWN THEIR TOTAL COST OF RISK."

— Kevin Finn, vice president, National Accounts, Captives and Specialty Programs, The Hartford



For example, predictive modeling can identify claims that warrant special attention due to the potential for lengthy loss time durations, high medical costs, subrogation or other factors.

### UNCOVERING NEEDLES IN HAYSTACKS

"These are claims that for non-obvious reasons have potential to become very costly long-term," he said.

"Finding these obscure but synergistic factors early in a claim's lifecycle is a major advantage and helps to ensure that we are leveraging our organization's best thinking on every claim," said Kinney.

The Hartford integrates predictive models that use patented technology and various analysis techniques — text mining, for example — to evaluate claims for potential issues including severity, volatility and subrogation.

"The latest technology has created even more horsepower to manage the growing volume and types of data generated in the claims process," said Kinney.

### PREDICTING VOLATILITY

Modeling can be a very effective way to root out claim volatility, for example, which typically emerges in a large loss claim that is characterized by the unpredictable.

"A volatile claim is one that doesn't behave as expected," Kinney said. "Our models are looking for early indications of volatility, so we can allocate our most experienced adjusting, medical and legal resources when intervention is most effective. Aligning the most complicated claims with appropriate resources helps to achieve more favorable outcomes for our customers and their employees."

Many of the most challenging and largest claims can be the result of seemingly benign injuries. For example, a workers' compensation claim with an opioid prescription has the potential to become volatile due to the addiction factor.

Once those triggers are flagged, the claim can be assigned to adjusters and additional specialists, as appropriate, with the goal of assigning the most complex claims to the most experienced adjusters.

"One claim may need a clinician while another requires return-to-work coordination. Modeling touches nearly every aspect of a claim," noted Kinney.

### 24/7 MODELING

"Volatility is very nuanced and often difficult to uncover early in the claim cycle," explained Paul Drennan, assistant vice president of claims research at The Hartford. "The best strategy is to have an algorithm relentlessly watching every claim."

The Hartford's predictive models are run on every claim from First Notice of Loss (FNOL) throughout the claim lifecycle, and claims profiles are continually updated as new data emerges.

"As the data becomes richer, a claim may cross a



**MODELS FLAG** potentially volatile claims early so appropriate medical, legal and adjusting resources can be assigned when intervention is most effective.

threshold of potential volatility and warrant additional resources," said Drennan.

### MANAGING TOTAL COST OF RISK

Risk managers and insurance buyers with large deductible programs especially benefit from predictive modeling, given their significant risk-sharing role.

"For our larger clients, predictive modeling is a true value-add when The Hartford is handling their claims," said Kevin Finn, vice president of The Hartford's National Accounts, Captives and Specialty Programs. "Our models have the ability to access years of robust data, which allows us to use that information to identify potential issues and take action to improve the outcome."

The continuous monitoring is a key benefit to risk managers who want to know that a claim is being managed effectively, so they are not paying more than they should for a claim.

"With persistent monitoring, we can create a consistent claim experience," said Kinney. "We see these scenarios through early detection and refining claim scores, and then we can react quickly to enhance the outcomes."

"Predictive analytics can have a meaningful impact for our clients in driving down their total cost of risk," said Finn. "When you consider that 5 percent of claims can generate 50 percent of a company's loss costs, early identification of that smaller subset of highly volatile claims is critical for achieving optimal outcomes for both employees and employers."

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