

BEST'S REVIEW® ISSUES & ANSWERS: RISK ANALYTICS, DATA AND AI

Experts discuss new developments in the risk management of abuse claims; the role of analytics in the insurance industry; and the latest on the adoption of generalized linear models by insurers.



Interviewed Inside:



Andy Shockey
Philadelphia Insurance Companies



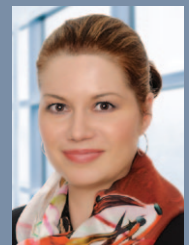
Pragya Sharma
Nationwide



Jennifer Law
Nationwide



Gaétan Veilleux
*Pinnacle Actuarial
Resources*



Radost R. Wenman
*Pinnacle Actuarial
Resources*

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Protecting the Most Vulnerable

Andy Shockey, Assistant Vice President for Philadelphia Insurance Companies, says when it comes to mitigating abuse and molestation, there are best practices agents should make their clients aware of. “It starts with the culture that is set by the CEO and moves through the organization through policy and procedure, just like any other topic, but this one has that nuclear potential to wreck a mission of an organization,” he said. Following are excerpts of an interview.

What can agents do to help clients address abuse and molestation risk?

If they haven’t had a conversation with their clients, or if it’s been a while, schedule the time to have that conversation. It might look as simple as reviewing a crisis management plan to see if this incident even appears specifically. And determining if an allegation is aired or if an employee is arrested and charged with this type of incident, what happens? Is there a victim-centric approach in that crisis management plan? Agents should also encourage clients to use support resources that might be available from their carrier. A lot of times, they’re at no cost, and can help prevent this type of incident. Finally, it’s important to understand state laws are changing, and that is where it is imperative to pay attention to the venue that you’re operating in.

How does PHLI support its policyholders that face abuse and molestation risks?

We’re continuing to educate our agents and our policyholders on strategies that they can reasonably undertake to reduce the potential, and raise the barrier to this event happening in their business. Most importantly, we have people who can help. When an agent is asking questions, we have the experienced personnel getting those questions answered. We have staff and personnel across our company that can have the conversations that need to be addressed before there’s an incident. Should an incident happen, we have claims professionals who understand the magnitude of this, how serious it is and the very sensitive matters across the board. Making sure we continue to position our clients in a very victim-centric approach and to provide the care, despite the circumstances, once that allegation or that charge is made.



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Andy Shockey

Assistant Vice President
Philadelphia Insurance Companies



“Our risk management and claims staff are knowledgeable and experienced in dealing with these issues and are here to support our agents and customers.”

Go to the Issues & Answers section at bestreview.com to watch an interview with Andy Shockey.

What new developments are you seeing with the risk today?

There has been and will continue to be new legislation at the state level, possibly at the federal level, but it will stay in the news and on people’s minds. Organizations need to consider that while some steps might not be required by law yet, there are reasonable steps that can be taken to prevent an incident. One is asking for proof of training records. Certainly, the reason to ask those questions is first and foremost to prevent this type of incident in an organization from happening, that irreparable harm from taking place to the victim. It’s important to realize that later is too late to have some of these conversations in the middle of a crisis.

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Change Through Analytics

Pragya Sharma, Senior Analytics Solutions Adviser at Nationwide, and Jennifer Law, Associate VP Underwriting and Operations at Nationwide, are both passionate about the role of analytics in the insurance industry and how it's leading to better decisions at Nationwide. Following are excerpts of an interview with them.



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Why are risk analytics important to Nationwide?

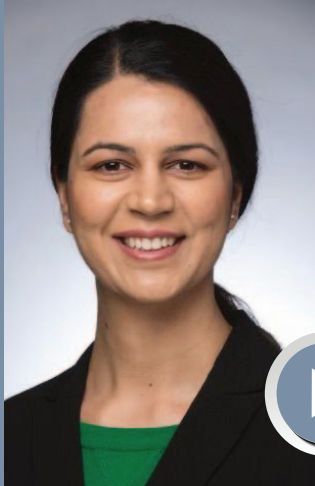
Law: Risk Analytics allow our business partners to make better informed decisions when it comes to such things as their underwriting, pricing of risk, or claims handling. At Nationwide, we are taking a holistic approach and addressing it at all levels. Our approach is connecting the underwriting, data and analytic team, claims, actuarial, all of our support teams to partner together to develop well rounded tools, taking into consideration all aspects of the underwriting risk and selection process. For example, when developing our predictive analytics tool, our underwriting and claims teams considered questions that have an impact on our risk selection, the “ingredients” while our data and pricing teams evaluated those identified factors and created “the special sauce.” Using our partner data, we can fill any gaps we have in our data repository, extrapolate likely scenarios, and validate our model. All of this is to benefit our customers with pricing accuracy, appropriate capital deployment and treatment of claims. The bottom-line goal to all of our risk analytics development is to strengthen and protect Nationwide’s capital.

Do risk analytics fold into the Nationwide culture?


Law: We are layering the understanding of data and how it can improve our decision making into our leadership and upskilling programs. This includes consuming and interpreting the data, the adoption of analytics, the design of business intelligence, and then impressing on our associates how data integrity is critical. In general, our philosophy on analytics is we design as a tool, not a rule. We are designing them to show our associates the path to make a well-informed decision, and not necessarily tell them the answer.


Sharma: It is not just about tools and analyzing data, it is also about building a culture with the right mindset around data driven solutions. In 2020, we hosted an internal data science competition, where people from different domains across the organization formed cross-functional teams to solve a business challenge. At the end of the competition, data scientists, data engineers, and partners from technology, business, and actuarial collectively came up with a fully formed deployable solution in a

Pragya Sharma
Senior Analytics Solutions Adviser



Jennifer Law
Associate VP – Underwriting and Operations





Go to the Issues & Answers section at [bestreview.com](https://www.bestreview.com) to watch an interview with Pragya Sharma and Jennifer Law.

span of a few weeks. Also, people who had not been exposed to analytics work before expressed interest in learning more and saw the value-add in including it in their work.

What's next for Nationwide when it comes to analytics?

Sharma: A lot of exciting things! For some of our surplus lines’ products, the data can sometimes be thin, and the quality is not always great. We are all aware of the challenges of working with old, fractured legacy systems. Firstly, we must update those systems, so that we can make the data extraction easier. Secondly, we capture a lot of data but not all of it is readily usable. Making the data consumable is key. Lastly, there are some business segments where we do not have enough volumes of data, but there is plenty of third-party data that can be leveraged to bring analytical insights for these segments. The goal is to enable informed decision-making, not just at the product level, but also at the customer level by providing insights at each step, including descriptive, predictive and prescriptive analytics.



You're the expert on your business.
 But we can help you leverage the
 wealth of **information** out there.

$$f_j C_{ij}$$

$$(Y|Z))^2$$

$$\sqrt{E(d_{ij})}$$

$$E(C_{ij+1} | C_{ij}) = f_j$$

$$\text{Var}(Y) = E(\text{Var}(Y^2|Z))$$

$$\text{Var}(f_j) = \sigma_j^2 / \sum_i C_{ij}$$

Every business has its own strategic goals, and our expertise will help you achieve yours.

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Model Behavior

Speaking about GLMs or generalized linear models, Gaétan Veilleux, Senior Consulting Actuary, Pinnacle Actuarial Resources, said, “For insurers, the foremost advantage of GLMs is flexibility. After all, it was largely developed to allow for more generalized assumptions over linear regression.” Radost Roumenova Wenman, Consulting Actuary, Pinnacle Actuarial Resources, added, “That flexibility includes the inherent ability of GLMs to model the variety of loss distributions as well as account for the relationships among the predictor variables.” Following are excerpts of an interview.

Why are insurers using GLMs to set premiums?

The industry’s widespread adoption of GLMs is the greatest testament to their usefulness for modeling risk and setting prices. Over the course of the last few decades, the models have become indispensable for actuaries and data scientists, who have come to rely on GLMs for prediction over, say, standard linear regression models. GLMs may utilize linear regression, but the link function along with the exponential family of distributions allow the model to fit a series of predictor variables to more flexibly quantify risk. This is critical considering the type of variables that insurers need to incorporate in pricing and the metrics needed to evaluate, including frequency, severity and pure premium. As with other statistical methods and approaches—or any other business improvement or innovation—it is their proven value, through efficiency and effectiveness, that has made the use of GLMs practically universal within the insurance industry.

Do you see GLMs as the future of setting rate?

Similarly to the relationship of GLMs to linear regression models, we shouldn’t assume that GLMs will remain industry standard forever. We will likely see new tools that will enhance, augment or perhaps replace GLMs as a preferred model. Certainly, artificial intelligence and machine learning may have some bearing on which tools and models actuaries and insurers use. More immediately, however, there are insurance industry applications in which GAMs, or generalized additive models, have demonstrated an advantage over GLMs.



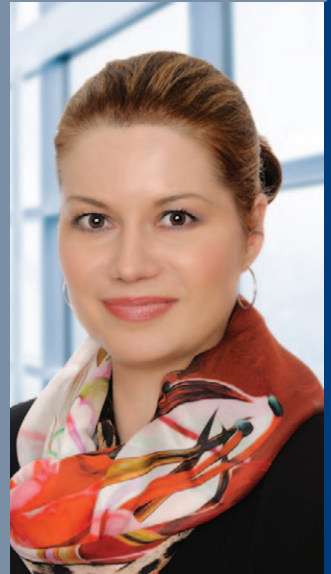
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Radost R. Wenman

Consulting Actuary
Pinnacle Actuarial Resources



Is there an argument to be made for using a GAM as opposed to a GLM?

As with the advantage of GLMs over standard linear regression, the main advantage of GAMs over GLMs is an even higher degree of flexibility. GAMs are considered an extension of GLMs, partially because both are based on the aforementioned link function and the exponential family of distributions. But because GAMs can incorporate a wider range of inputs and functions, including nonlinear trends, unlike GLMs, they can model general, curvilinear shapes more effectively. That gives GAMs an edge in certain applications, and types of insurance that include a wider range of data.

Where are GAMs most effective?

Since GAMs can incorporate more flexible variable effects into an analysis than a typical GLM, GAMs can be a highly useful option in our age of big data. The diversity and depth of data currently being aggregated is greater than ever before. A great example is vehicle telematics, characterized with much greater volume and nuance of driving data than what was accessible a decade ago.

