Hello friends,

As we enter our busiest time of year, please know that SCOR is ready to support you to help get your policies issued.

With that in mind, please see the articles on predictive modeling and Velogica enhancements in this edition of your *Underwriting Newsletter.*

We strive to assist you by more accurately classifying risks and streamlining the applicant experience as more people are discovering value in life insurance.

Our facultative team is also available to help you with your most challenging cases. We live our mantra every day: Life is precious; therefore, we value life.

In this unprecedented year we are most grateful for your confidence in us and for your partnership.

We hope this holiday edition of our newsletter finds you safe and able to celebrate the season with joy and better things to come.

Terry Feeney
AVP, Underwriting

Predictive Modeling

Just Another Tool for Life Underwriting?

By Peter Komsthoeft, VP, Underwriting Research

It may be safe to say that predictive models in the US Life underwriting space are here to stay. What is less certain and agreed is the change in actual underwriting approaches driven by these models in the near term.

All too often the discussion seems to be framed as an either/or decision. Stay with legacy underwriting (rule based) or completely switch to a predictive model scoring approach. I would like to make an argument that there is no need for such a black-and-white approach and that there are ways to utilize much of the power of predictive models without abandoning all tried-and-true legacy approaches.

First some definitions:
- **Predictive modeling** is a mathematical process that seeks to predict future events or outcomes by analyzing patterns that are likely to forecast future results.
- **Legacy underwriting** is the process of using a number of known features to assign applicants to various pre-defined UW classes. The features are scored using pass/fail and/or qualification ranges to accomplish this process of class assignment.

The US Life insurance industry has many decades of highly credible experience data that show that this legacy approach works. Standard classes have better mortality outcomes than Rated classes; Preferred classes have better outcomes than standard classes.

But there are drawbacks. It is difficult to know for certain in the legacy approach which feature is most responsible for these outcomes and, moreover, if rule changes are anticipated, it is difficult to forecast the impact on outcomes. Mortality is very much a lagging indicator – it takes years to know whether a particular approach was well thought out or not. This tends to limit the magnitude of changes that typically are implemented; slow incremental changes are favored over sweeping redesigns.

Benefits of using predictive models

Predictive models on the other hand take existing data, both the underwriting features and the known outcomes and, disregarding any prior assumptions, underwrite this data by looking for patterns embedded in the data that are most closely connected to the outcomes.

This then results in two additional tools:
- A score attached to each applicant profile that can be used to estimate the contribution of this risk (and risks similar to it) to future mortality outcomes
- A ranking of the feature importance – which underwriting features are most powerful and in what combination

Armed with these new tools it is possible to re-examine nearly any previously underwritten block of applicants, whether or not there is credible mortality available.

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This exercise then can be extremely useful to test potential rule changes for their ultimate impact. Predictive modeling used in this way refines legacy underwriting without directly making specific decisions.

Specific knowledge of the ranked feature importance also contributes to refined legacy underwriting. Additional rules may be created to leverage this previously untapped prediction power – again without directly using the model to make specific underwriting decisions.

For any block of business, the distribution of model-based scores is highly descriptive of the embedded risk within that block. Using score distributions to compare different blocks -- whether by product, timeframe or production source -- can be a highly efficient guide towards detail analysis, even and especially when credible mortality is unavailable.

In any scenario predictive model scores contribute to a more refined underwriting approach without having to render the classification decisions. It may be one way to overcome resistance to the perceived black box nature of model approaches and provide for a transition period that faces fewer obstacles than a wholesale switch.

A predictive model example
Many examples could be illustrated but let me choose one that stands out for a number of reasons.

The metabolite GGT (Gamma-Glutamyl Transferase) has been included in most US routine blood profiles for decades. Originally it was thought to be associated with liver conditions, specifically those due to excess alcohol consumption.

In more recent years, however, nearly any research group, those from clinical backgrounds as well as insurance related, has found that GGT is a highly powerful mortality predictor, especially in what are considered clinically normal levels. It is thought that GGT acts as a proxy measure for chronic sub-clinical inflammation, and inflammation has been shown to be highly associated with many disease conditions and mortality outcomes.

In most current legacy underwriting approaches, GGT would only contribute to an underwriting classification if it were deemed to be clinically abnormal. However, with the knowledge derived from the model approaches, it is easy to envision an additional rule using GGT that would restrict preferred class placement to those individuals with a more favorable normal level. The most appropriate cut points can easily be determined using historical underwriting decisions enriched with model scores.

While predictive models are here to stay, not everything else must be discarded. We can instead use the power of these models to refine our proven underwriting methodology.

An Insider's View
Velogica® Developing Enhanced Application

The Velogica team is currently developing a customizable, generic application that allows for a data-driven, expanded underwriting process. The previous application was used primarily for simplified issued products.

Clients will be able to adjust the application based on their company's risk appetites. New features include customizable workflows that engage different referral scenarios and increased client rating maximum for straight-through processing.

SCOR's Velogica team is committed to exploring potential data sources and determining the impact those sources may have on this process.

If you would like to learn more about this exciting opportunity, please contact Brendan Paradis, AVP, Underwriting, Velogica.

Underwriter Spotlight

Liz Hickman, FALU, FLMI, CLU, ARA

Senior Underwriting Consultant since 2015

Liz has more than 27 years of experience providing risk assessment to clients. As one of SCOR's FAST resource coordinators, Liz is tasked with increasing visibility and use of our FAST program. She is responsible for departmental reporting and recently earned Certified Scrum Product Owner (CSPO) certification.

Liz works remotely out of the Charlotte, NC office and currently lives in Concord, NC. She enjoys reading, running, music and travel, as well as spending time with her husband, Jon, and daughter Holly, 16.

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