Accelerated Underwriting (A) Working Group

Ad Hoc Drafting Subgroup

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Resources

New York Circular No. 1

Abbreviated Summary of Presentations

National Association of Insurance Commissioners (NAIC) Principles on Artificial Intelligence (AI)

Casualty Actuarial and Statistical (C) Task Force Regulatory Review of Predictive Models White Paper

Introduction

In 2019, the NAIC established an accelerated underwriting working group to consider the use of external data and data analytics in accelerated life insurance underwriting, including consideration of the ongoing work of the Life Actuarial (A) Task Force on the issue and, if appropriate, draft guidance for the states. A more detailed procedural background can be found in the appendix. This paper is the output of over a year’s work by regulators to understand the current state of the industry and its use of accelerated underwriting. It summarizes what has been learned over the past year, contextualizes that learning and the topic of accelerated underwriting within other NAIC work and standard regulatory product evaluation processes, and makes recommendations for regulators and insurers when evaluating accelerated underwriting.

Accelerated underwriting in life insurance is delivering benefits to both consumers and insurers. In order to fairly deliver the benefits of more convenient and cost-effective processes, regulators and insurers should be guided by current law related to fair trade practices and unfair discrimination.

What is Accelerated Underwriting?

Throughout this paper, we use the term accelerated underwriting in life insurance. We propose the following as a definition:

Accelerated underwriting in life insurance is a process to replace traditional underwriting and allow some applications to have certain medical requirements (such as paramedical exams and fluid collection) waived. The process generally uses predicative models or machine learning algorithms to analyze data pertaining to the applicant, which includes both traditional and non-traditional underwriting data that comes from both the applicant and external sources.

To understand accelerated underwriting in life insurance, it helps to understand underwriting in general and how it functions. Life insurance underwriting is the process of classifying applicants into risk categories to determine the appropriate rate to charge for transferring the financial risk associated with insuring the applicant. Traditional life insurance underwriting involves assessing the applicant’s physical health, usually through blood work, urine analysis, doctor’s notes, and a physical exam. Once this information is collected, an underwriter determines whether an applicant is eligible for coverage and the risk class to which that individual belongs. In addition to traditional underwriting and accelerated underwriting, there is also a process called simplified underwriting, or simplified issue. Simplified underwriting relies on very limited information (typically the applicant’s sex and age) and little, if any, additional information. Generally, there is no risk classification beyond age, gender, and possibly smoker status. Due to the limited information collected about an applicant with simplified underwriting, the expected mortality is higher than with traditional or accelerated underwriting, and the price reflects that mortality.[[1]](#footnote-2)

In addition to collecting an applicant’s medical history, the types of data typically collected for use in accelerated underwriting rely upon multiple variables that are components or data points in predicative models or machine learning algorithms. Examples of the variables used by some accelerated underwriting models include: smart phone apps, consumer activity wearables, claim acceleration tools, individual consumer risk development systems, purchasing history, behavior learned through cell phone usage and social media. An insurer may, or may not collect all this data from an applicant.

Accelerated underwriting, as it is currently being used in life insurance, is not used to deny an application and is only available for certain applicants applying for certain life insurance products. An article in Insurance Journal from April 21, 2021 stated that underwriters are using accelerated underwriting for several term and whole life policies[[2]](#footnote-3). According to the SOA 2019 Survey, most companies currently limit the application of accelerated underwriting to applicants between the age of 18 and 60 interested in term life insurance policies with a face amount between $100, 000 and $1,000,000. The exact parameters of the application of accelerated underwriting varies by insurer. There is an expectation that, as insurers gain more experience with accelerated underwriting, its use will apply to more categories of applicants and policies.

The Working Group learned that life insurers use accelerated underwriting in two primary ways: 1) Accelerated underwriting is used to “triage” applicants, where unsuccessful applicants are re-routed to traditional underwriting, and successful ones continue through the accelerated underwriting process; or 2) Accelerated underwriting is used to create a score for an applicant to then be put into different risk categories. Accelerated underwriting employs a predictive model or machine learning algorithm, which is tested and modified via back-testing. The program learns from its mistakes to improve itself, using an underwriter’s feedback. It evolves over time. In fact, most accelerated underwriting algorithms used in life insurance are in their second or third generation. The COVID-19 pandemic sped up the adoption of accelerated underwriting in the industry as both consumers and insurers looked for options to purchase and write policies that relied more on technology and involved less in-person contact.

It is important to note that the accelerated underwriting programs the Working Group learned about use human underwriters to review the recommendations of the accelerated underwriting program and makes the final decision with respect to an application. This includes the decision on whether or not to issue a policy and the premium charged. At this time, it is not anticipated that accelerated underwriting will obviate the need for a human underwriter.

For companies, the accelerated underwriting process is less cumbersome and costs less than traditional underwriting. By improving the underwriting experience for consumers, companies also benefit from quicker policy issue times with higher policy acceptance rates. [[3]](#footnote-4)

General Discussion of Issues and Recommendations

Some may argue that accelerated underwriting is nothing new. In the 1980s and 1990s life insurance could be purchased through the mail via postcard. However, that underwriting process normally focused on the age of the person and very few other variables. Today's accelerated underwriting is using multiple variables that are components or data points in an advanced algorithm. This increasing automation of life insurance underwriting presents new regulatory challenges. As is typical, the technology has moved ahead of state regulation. While differences in process have evolved, the concern the regulators have is the same as with all underwriting -- whether or not the process is **fair, transparent and secure.** With regard to accelerated underwriting in life insurance, this pertains to input data, output data, the algorithm and the results of the process.

Insurers’ increasing use of consumer data in accelerated underwriting presents regulatory challenges. One particular challenge is the potential for **unfair discrimination**. Some companies believe a person’s behavior has a strong correlation with mortality risk. This behavioral data includes gym membership, one’s profession, marital status, family size, grocery shopping habits, wearable technology and credit scores. Although medical data may have scientific linkage with mortality, behavioral data may lead to questionable conclusions as correlation may be confused with causation.

For example, a high-income individual is perceived as someone who has excellent medical care. However, a high-income individual may also have the resources for illegal drug use or other dangerous habits or hobbies. A healthy young couple, on the other hand, may not have the disposable income to join a gym, however, they may exercise on their own. In either case, the lack of a gym membership or lower income may not indicate an increased mortality risk.

Recommendations

Consistent with the artificial intelligence principles approved by the NAIC in 2020, the use of accelerated underwriting in life insurance should be fair, companies should be accountable for operating in compliance with applicable laws, and the process and data used needs to be secure. To accomplish these objectives, regulators should dialogue with insurers and third-party vendors to determine if consumer data is being used in problematic or unfair ways, or generating unfair outcomes, as currently prohibited in most state law.

Insurers and other parties involved in accelerated underwriting in life insurance should:

* Take steps to ensure data inputs are accurate and reliable.
* Ensure that the external data sources, algorithms or predictive models are based on sound actuarial principles with a valid explanation or rationale for any claimed correlation and causal connection.
* Be able to provide the reason(s) for any adverse underwriting decision to the consumer and all information upon which the insurer based its adverse underwriting decision.
* Take steps to protect consumer privacy and ensure consumer data is secure.
* Have a mechanism in place to correct mistakes if found.
* Produce information upon request as part of regular rate and policy reviews or market conduct examinations.

The remainder of this paper delves into some specific topics and provides more detailed recommendations about those topics.

[Additional sections to be released for comment at a later date.]

**Appendix: Additional Procedural Background**

At the 2019 NAIC Summer National Meeting, the Life Insurance and Annuities (A) Committee discussed a referral it had received from the Big Data (EX) Working Group. The Big Data Working Group had discussed the use of predictive models in accelerated underwriting in life insurance, instead of medical examinations and the collection of fluids. The Big Data Working Group agreed that the issue would be most appropriately addressed by the life insurance subject matter experts and voted to refer the issue of the use of external data and data analytics in accelerated underwriting in life insurance to the Life Insurance and Annuities (A) Committee (Committee).[[4]](#footnote-5)

The Committee discussed the referral and acknowledged that there are a multitude of issues surrounding insurers use of data models and data analytics; issues that extend into many areas of insurance and implicate the work of several groups at the NAIC. In addition to the Big Data (EX) Working Group, there is the Innovation and Technology (EX) Task Force, the Artificial Intelligence (EX) Working Group, the Casualty Actuarial and Statistical (C) Task Force andthe Privacy Protections (D) Working Group. The Life Actuarial Task Force was also looking at the use of accelerated underwriting in life insurance from an actuarial perspective, including looking at any potential impact on insurer solvency.

The Committee agreed that an effort to delve into accelerated underwriting in life insurance would need to be narrowly focused, while taking into account the work of these other NAIC groups touching on the same topic.

Robert Muriel (IL) chaired the Working Group and Grace Arnold (MN) was the vice chair. The following were Working Group members: Jason Lapham (CO); Russ Gibson (IA); Rich Piazza (LA); Cynthia Amann (MO); Rhonda Ahrens and Laura Arp (NE); Ross Hartley and Chris Aufenthie (ND); Lori Barron (OH); Elizabeth Kelleher Dwyer (RI); Lichiou Lee (WA); Mark Afable (WI). In January 2021, Commissioner Afable became chair of the Working Group and the rest of the membership remained the same.

The Working Group met for the first time on Oct 2, 2019 and developed a work plan to accomplish its charge. The work plan contemplated the Accelerated Underwriting (A) Working Group progressing through three phases with the goal of completing its charge by the 2020 Fall National Meeting. The first phase was focused on information-gathering. The second phase focused on identifying the issues and deciding on a work product, with the final phase devoted to drafting.

During the information gathering phase the Working Group heard 15 presentations from varying stakeholders, including an academic (Professor Patrick Brocket[[5]](#footnote-6)), insurance companies, consulting firms (Deloitte and Milliman), a consumer advocate (Birny Birnbaum—CEJ), the American Academy of Actuaries, lawyers from 2 Illinois law firms (Foley & Lardner and Edelson),  a machine learning assurance company (Monitaur), and a data analytics company (Verisk). Several of the presentations were held in regulator-only meetings when requested by presenters in order to share proprietary and confidential company-specific information.

Regulators from the Working Group volunteered to participate in two ad hoc groups to tackle the second and third phases of its work plan: There was an ad hoc NAIC liaison group to ensure awareness of and coordination with any work, including guidelines or protocols, developed by other NAIC groups, past and present, that related to the Working Group. There was also an ad hoc drafting group that agreed to take the information gathered, identify issues, recommend and draft a work product for review and approval by the Working Group.

In November 2020, the ad hoc drafting group shared with the Accelerated Underwriting (A) Working Group, a proposed draft outline for an educational report exploring accelerated underwriting in life insurance to provide guidance to regulators, industry, and consumer advocates and other stakeholders. In February 2021, the ad hoc groups merged.

1. August 2018, Emerging Underwriting Methodologies and their Impact on Mortality Experience Delphi Study, From Society of Actuaries, Methods 3.1.1, page 9 [↑](#footnote-ref-2)
2. *Appalachian Underwriters Expands into Life Insurance Market with Fintech Ethos,* Insurance Journal,April 21, 2021

<https://www.insurancejournal.com/news/national/2021/04/21/611009.htm> [↑](#footnote-ref-3)
3. Presentations to Accelerated Underwriting (A) Working Group between Dec. 8, 2018 and Sept. 24, 2020. [↑](#footnote-ref-4)
4. *See* NAIC Proceedings – Spring 2019, Innovation and Technology (EX) Task Force, Attachment Two. [↑](#footnote-ref-5)
5. Gus Wortham Chair in Risk Management and Insurance at the University of Texas at Austin and Editor, North American Actuarial Journal. [↑](#footnote-ref-6)