

# **Life Insurance Artificial Intelligence/Machine Learning Survey Results**

## **NAIC Staff Report**

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## INTRODUCTION

### Purpose of the Life AI/ML Survey

At the outset of the Artificial Intelligence (AI)/Machine Learning (ML) surveys, the predecessor to the Big Data and Artificial Intelligence (H) Working Group defined five key objectives. Regulators want to: 1) learn directly from the industry about what is happening in this space; 2) get a sense of the current level of risk and exposure and whether or how the industry is managing or mitigating that risk; 3) develop information for trending, such as how the risk is evolving over time, and the industry's responsive actions; 4) inform a meaningful and useful regulatory approach, framework, and/or strategy for overseeing and monitoring this activity; and 5) learn from prior surveys to inform and improve future surveys.

#### Goals of the Life Survey

1. Analyze industry use of artificial intelligence (AI)/machine learning (ML).
2. Identify industry's risk and exposure and mitigation of model risk.
3. Calculate trends.
4. Gather background for regulatory approach/framework.
5. Inform/improve future surveys.

This Life AI/ML Survey is expected to help regulators in terms of 1) consumer protections and 2) areas that regulators might expect companies involved in this type of activity to be, actively and with intention, ensuring that they are putting processes and procedures in place to meet, or at least consider, the expectations laid out in the NAIC's AI Principles.

The requesting states agreed the collected data will not be used to evaluate or determine the company's compliance with applicable laws and regulations.

### Purpose of This NAIC Staff Report

With the large volume of data submitted for this survey, the subject matter expert (SME) group asked NAIC technical staff to assist in conducting a thorough analysis. NAIC staff were asked to evaluate the results, provide data analysis, and investigate potential inaccuracies in the data. The team was specifically asked to investigate what types of data are being used by companies in their AI/ML models; evaluate third-party AI/ML model and data use; explore levels of governance; and evaluate transparency, consumer disclosures, and potential consumer actions to correct data.

## BACKGROUND

The Life AI/ML Survey was conducted under market conduct authority of fourteen states: Colorado, Connecticut, Illinois, Iowa, Louisiana, Minnesota, Nebraska, North Dakota, Oregon, Pennsylvania, Rhode Island, Vermont, Virginia, and Wisconsin ("Requesting States"). The Requesting States conducted the survey to:

- Gain a better understanding of the insurance industry's use and governance of big data and AI/ML.
- Seek information that could aid in the development of guidance or a potential regulatory framework to support the insurance industry's use of big data and AI/ML.
- Inform regulators of current and planned AI/ML related company business practices.

## **Life Insurance Artificial Intelligence/Machine Learning Survey Results**

The survey call letter from the Requesting States was distributed on May 3, 2023, with survey responses requested by June 30, 2023. A total of 179 companies were selected to participate in the survey. Less than 50% indicated they are applying AI/ML techniques to life insurance operations.

### **Survey Web Page**

The survey template, filing documentation, frequently asked questions (FAQ), definitions, and other information can be found on the [Life AI/ML Survey](#) web page.

### **Surveyed Companies**

Life insurance for the purpose of this survey was described under the National Association of Insurance Commissioners (NAIC) Type of Insurance (TOI) Life. This includes term life, whole life, universal life, and variable life.

The life insurance companies required to respond to the survey were those that 1) have at least \$250 million in national life insurance premium for 2021, 2) covered at least 10,000 lives by issuing term insurance in 2021, or 3) is an identified InsurTech company will be required to complete the survey.

### **Regulatory Subject Matter Experts**

For each of the requesting states, the following SMEs created the survey and will communicate the survey responses to the Big Data and Artificial Intelligence (H) Working Group.

CO: Jason Lapham  
CT: Paul Lombardo  
IL: Erica Weyhenmeyer  
IA: Jared Kirby  
LA: Nichole Torblaa  
MN: Fred Andersen  
NE: Director Eric Dunning  
ND: Chris Aufenthie/Ross Hartley  
OR: TK Keen  
PA: Shannen Logue  
RI: Matt Gendron  
VT: Commissioner Kevin Gaffney  
VA: Eric Lowe  
WI: Lauren Van Buren

The following NAIC staff assisted the SMEs with survey development, survey distribution, and data collection: Tim Mullen, Teresa Cooper, Eric King, Justin Cox, Kris DeFrain, and Dorothy Andrews.

### **Artificial Intelligence/Machine Learning Definition**

For purposes of this survey, AI is defined as models that can simulate learning in performing tasks. ML is a subset of algorithms that facilitate learning without being explicitly programmed to achieve a predetermined result. Models that are considered AI and built using ML include robotics, natural language processing, and sentiment analysis.

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AI/ML describes an automated process in which a system begins recognizing patterns without being specifically programmed to achieve a pre-determined result. This is different from a standard algorithm in that an algorithm is a process or set of rules executed to solve an equation or problem in a pre-determined fashion. Evolving algorithms are considered a subset of AI/ML.

Standard features of AI systems adopted for purposes of this survey include:

- Systems that adapt and adjust to new data and experiences without manual human intervention.
- Systems that arrive at results for which the outcomes and the stepwise approach toward the outcomes were not configured in advance by a human programmer.
- Systems that dynamically respond to conditions in the external environment without the specific nature of such responses being known in advance to the designers of the systems.
- Systems that use deep-learning neural network algorithms.
- Systems that learn under a supervised, semi-supervised, unsupervised, or reinforcement learning style.
- Systems that engage in automatic speech recognition, facial recognition, image recognition, text recognition, natural language processing, generation of customer-specific recommendations, automated customer communications (e.g., chatbots with non-preprogrammed prompts), or any other approach that does not require either preprogramming or human intervention in every instance of an action or decision.
- Systems that automatically generate adaptive responses based on interactions with a consumer or third party.
- Systems that determine which data elements to rely upon, in a non-preprogrammed fashion, among various possible alternatives.
- Generalized linear modeling (GLM) or generalized additive modeling (GAM) are considered ML. See the Appendix for an expanded list of ML techniques.

For purposes of this survey, the following AI systems are excluded:

- Scorecards that deterministically map consumer or other risk characteristics to treatments or decisions.
- Tables of point or factor assignments in risk classes.
- Deterministic “phone trees” that navigate consumers through prerecorded voice prompts.

### **Confidentiality**

The individual company results are confidential. Some combined results will be publicly presented at Big Data and Artificial Intelligence (H) Working Group meetings and are presented in this report.



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## GENERAL SELECTION CRITERIA OF THE SURVEY

There were 179 companies that met the initial criteria to be enlisted to take the survey. However, for various reasons, 16 of the companies were exempt. The remaining 163 companies were subjected to three screener questions to determine whether they had to complete the entire survey. The screener questions are:

1. Does your company use AI/ML as defined in this survey? (Q3.1)
2. Does your company plan to use AI/ML as defined in this survey? (Q3.6)
3. Is your company currently exploring the use of AI/ML as defined in this survey? (Q3.9)

If companies answer “Yes” to Q3.1, then the remaining screener questions do not apply. If the company answers “No” to Q3.1 and “Yes” to Q3.6, then Q3.9 does not apply. If the company answers “No” to both Q3.6 and Q3.9, then Q3.9 is presented. The possible outcomes on these three questions are as follows:

1. Yes – NA – NA
2. No – Yes – NA
3. No – No – Yes
4. No – No – No

If a company responds to the screener questions with a No – No – No response, the survey ends for the respondent and no more survey questions are presented. For all other response sequences, the entire survey must be completed. The table below reflects an accounting of the 179 companies by response sequence and exemption status.

**Table 1: Companies Using, Planning or Exploring the Use of AI/ML**

<b>Screener Questions Response Outcomes</b>	<b>Total Number of Surveys</b>	<b>% of Total</b>
Yes - NA - NA	76	42%
No - Yes - NA	8	4%
No - No - Yes	10	6%
No - No - No	67	37%
Incomplete	2	1%
Exempt	16	9%
<b>Total Surveys Issued</b>	<b>179</b>	<b>100%</b>

**Note:**

The sixteen (16) exempt companies will not be identified in this report.

The 85 companies that indicated they are not currently using or had no plan to use or explore the use of AI/ML also provided their reason(s) why, with the most often selected reason being “no compelling business reason.”

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

**Table 2: Reasons Companies Cited for Not Using AI/ML**

Reasons Cited for Not Currently Using AI/ML	Number of Companies
No compelling business reason at this time	48
Waiting for regulatory guidance	21
Lack of resources and expertise	31
Lack of Reliable Data	19
Lack of associated security risk	13
Reliance on legacy systems. Require IT, data and technology upgrades	31
Waiting on the availability of a third-party vendor product/service	8
Risk is not commensurate with current strategy or appetite	26
Other Reason	13

It should be noted that a company was above to select more than one reason listed. In addition to the options listed in the survey and shown in Table 2, a few companies wrote in additional reasons such as the following:

- 1) No beneficial of AI/ML
- 2) Products and procedures do not correlate with models that can simulate learning in performing tasks or use a subset of algorithms that facilitate learning without being explicitly programmed to achieve a pre-determined result
- 3) Closed block of business and there is no reason to utilize AI.
- 4) We believe that life insurance processing requires actual people to review and respond to the needs of the insured. A canned response does not display empathy or good customer service in our opinion. At the present time, we do not foresee any usage of AI in the future.
- 5) We continue to monitor development in Artificial Intelligence for potential applicability and integration into our business processes.

For companies that are not currently using AI/ML but are planning or exploring the use of AI/ML, Table 3 summarizes whether they will develop it internally, use third-party vendors, or both.

**Table 3: AI/ML Development Resource**

AI/ML Development Resource	Number of Companies
Develop Internally	22
Develop by a Third-Party	21
Develop Internally with a Third-Party	31

Companies were asked to identify the length of time they have been implementing AI/ML as defined in the survey in each of the operational areas, pricing, underwriting. Marketing and risk management. As depicted in Table 4, companies have a significant number of AI/ML models that have been implemented 3 years or more as well as a significant number just under the 1-year mark.

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**Table 4: Implementation Status of AI/ML by Insurance Operational Area**

Operational Area	NA	<1 year	1 - 3 Years	> 3 Years
Pricing	47	29	6	29
Underwriting	22	54	13	54
Marketing	19	57	14	57
Risk Management	60	16	8	16

Companies were asked to list operational areas other than (1) pricing and underwriting, (2) marketing, and (3) risk management where AI/ML is being used. The following areas were among those cited:

- Enhancing Agent Productivity
- Market Segmentation
- Fraud Detection
- Human Resources
- Call Centers
- Disability Product Outcomes
- Application Processing
- Quality Assurance
- Customer Service
- Cybersecurity
- Agent Recruitment
- Mortality & Lapse Assumptions
- Compliance
- Form Optical Character Recognition
- ERM Stress Calibration
- Enterprise Compliance
- Applicant Non-Disclosure
- Claims Approval/Processing
- Chatbots & LLM Assistants
- Internal Knowledge Platform

An important regulatory concern regarding the use of AI/ML in insurance is the use of automated decision systems that operate without human intervention or oversight. Of the 94 companies the question about the use of automated machine learning tools applied to, a clear majority indicated they do not use tools like DataRobot or Salesforce Einstein. Of the 24% that do engage with automated learning tools, there may be regulatory follow-up to understand more about the specific tools in use and the extent to which they are used and impact consumers.

**Table 5: Use of Automated Machine Learning Tools**

Are you using automated machine learning tools like DataRobot or Salesforce Einstein?		
Yes	23	24%
No	71	76%

Companies were asked if they use AI to track policies that undergo full underwriting. A significant number (59%) indicated no. While this is a high number, it does not mean companies are not tracking this metric at all. It is highly likely that companies are tracking this metric using non-AI approaches, i.e., manual approaches.

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**Table 6: Contract Tracking Using AI/ML v. Full Underwriting**

Does your company track each contract issued using AI/ML vs. those that go through full underwriting?

Yes	39	41%
No	55	59%

### COMPANY OPERATION: PRICING & UNDERWRITING

In addition to the screener questions discussed in the General Selection Criteria of The Survey section above, there is a secondary set of screener questions that apply only to the pricing and underwriting questions of the survey. The primary life products targeted by the survey are: (1) Term Life, (2) Whole Life, and (3) Universal and Whole Life. Question 4.1 on the survey is posed to respondents as follows:

Q4.1.

Indicate whether you use AI/ML to underwrite or price each of the products below.

	Select Yes or No	
	Yes	No
Term Life	<input type="radio"/>	<input checked="" type="radio"/>
Whole Life	<input type="radio"/>	<input checked="" type="radio"/>
Universal or Variable Life	<input type="radio"/>	<input checked="" type="radio"/>

There is only one combination of responses that will exempt a respondent from answering the questions in the pricing and underwriting section of the survey. The only combination of responses that exempted a company from completing the pricing and underwriting section of the survey is No – No – No as depicted above. The company was then directed to the Marketing use case section and then the Risk Management use case and Governance sections of the survey. If a company respond “Yes” to using AI/ML for just one of the product types above, the company was directed to complete a product inventory for each product priced or underwritten using AI/ML before being directed to the pricing and underwriting use case section of the survey, followed by the Marketing use case section and then the Risk Management use case and Governance sections of the survey.

### PRODUCT INVENTORY

For each product a company indicates is priced or underwritten using AI/ML, the company is asked to provide the following information:

- 1) Applicable Product Subtypes
- 2) Minimum Underwriting Age
- 3) Maximum Underwriting Age
- 4) Minimum Underwriting Face Amount
- 5) Maximum Underwriting Face Amount

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Table 7 summarizes the various product subtypes, minimum and maximum underwriting ages, and minimum and maximum underwriting fact amounts.

**Table 7: Life Insurance Product Underwriting Parameter Inventory**

Product Parameter	Term Life	Whole Life	Universal/Variable Life
Applicable Product Subtypes	Annual Term Convertible Term Decreasing Term Group Term Level Term	20 Pay Whole Life Executive Whole Life Fully Underwritten Guaranteed Issue Life Paid Up at 65 Lifetime Whole Life Limited Pay Whole Life Periodic Premium Simplified Issue Single Premium Ten Pay Whole Life 100	Indexed Universal Life Universal Life Variable Life Variable Universal Life
Minimum Underwriting Age	No Minimum 0, 15 - 18, 20, 21	No Minimum 0, 17, 18, 21, 50	No Minimum 17, 18, 20
Maximum Underwriting Age	No Maximum 45, 50, 55, 59, 60 65, 70, 74, 75, 80	No Maximum 50, 55, 59, 60, 65, 80, 85	No Maximum 50, 55, 59, 60, 65, 85
Minimum Underwriting Face Amount	No Minimum 10k, 15k, 25k, 50k 100k, 250k, 350k \$500 monthly	No Minimum 1k, 2k, 5k, 10k, 25k 100k, 1 mil	No Minimum 5K, 25k, 50k, 100k
Maximum Underwriting Face Amount	No Maximum 3k, 50k, 100k, 250k, 500k, 750k, 350k, 1 mil 2 mil, 3 mi, 10k/month	No Maximum 35k, 50k, 100k, 250k, 300k 500k, 1 mil, 2 mil, 3 mil	No Maximum 500k, 1 mil, 2 mil, 3 mil

The values reflected above do not appear unusual to life insurance products from low to high wealth individuals, or young to older age individuals. The product types also do not appear unusual.

### PRICING AND UNDERWRITING USE CASES

The use of AI/ML for specific uses cases were of regulatory interest for the survey. Those use cases are delineated below. The first question posed for each use case was whether the company was currently using, planning, or exploring the use of AI/ML. If the respondent answered “No,” no further follow up questions were posed. If the company responded “Yes,” the follow up questions sought to determine:

- 1) The highest level of deployment of AI/ML for the given use case. The levels included: Research, Proof of Concept, Prototype, Implemented in Production.

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- 2) The name of AI/ML models by name supporting the use case and the identification of the following for each named model:
  - a. Machine learning technique embedded in the model
  - b. Whether it was developed internally, by a third-party, or with the aid of a third-party
  - c. Level of decision influenced by the model:
    - i. Automation – No human intervention on execution
    - ii. Augmentation – Model advises human who makes decision – model suggests answer
    - iii. Support – Model provided information but does not suggest decision or action
    - iv. Other – Influence not provided by the three choices above.
  - d. Whether Model Governance is in place

The survey also allowed respondents to enter any additional commentary they wish to further explain their responses. Participants from the pilot study for the survey requested this option be included in the design of the survey. The use case sections that follow are primarily for presenting the tabular results. At the conclusion of this section, a list of observations is provided reflecting the major trends in the respondent remarks.

This section of the survey asks you to discuss the AI/ML techniques you deploy in select pricing and underwriting functions. The functions are:

1. Setting Pricing Assumptions
2. Reduce time to issue
3. Specialty Insurance Products for Certain Conditions, such as Diabetes
4. Automated Approval/Automated Denial
5. Input into Non-Automated Approval Decision/Non-automated Denial Decision
6. Underwriting Risk Class
7. Other Underwriting-Related Functions

Following these sections, the survey asks you to identify the vendors you engage to supply data for certain data types. The data types are: (1) Credit-Based Insurance Score, (2) Financial Credit Score, (3) Other Type of "Non-Credit" Score, (4) Public Records, (5) Demographic, (6) Telematics Type Data, (7) Driving Behavior, (8) Biometrics, (9) Medical, (10) Online Media, and (11) Other Non-Traditional Data Elements.

### **Pricing Assumptions Use Case**

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Setting Pricing Assumptions?

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**Table 8: Pricing Assumptions Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Setting Pricing Assumptions?

Yes	27	54%
No	23	46%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML for Setting Pricing Assumptions?

**Table 9: Pricing Assumptions Level of Deployment**

Level of Deployment	Number of Companies	%
Research	2	7%
Proof of Concept	0	0%
Prototype	4	15%
Implemented in Production	21	78%

**Table 10: Pricing Assumptions ML Types, Development Source, Decision Influence & Governance**

Machine Learning Techniques Utilized in Setting Pricing Assumptions

ML Technique	Count	Level of Decision Influence	Count
Deep Learning	0	Automation	5
Ensemble	2	Augmentation	24
Neural Network	0	Support	17
Regularization	9	Other	1
Rule System	0		
Regression	13	<b>Development Source</b>	
Bayesian Methods	0	Developed Internally	33
Decision Trees	0	Developed by a Third-Party	12
Dimensionality Reduction	0	Developed with a 3rd-Party	1
Instance-Based	0		
Clustering	4	<b>Model Governance - Yes</b>	42
Cox Regression	5	<b>Model Governance - No</b>	5
Other - Mostly GLMs	12		

### Reduced Time to Issue Use Case

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Reduced Time to Issue?

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

**Table 11: Reduced Time to Issue Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Reduced Time to Issue?

Yes	39	78%
No	11	22%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML to reduce time to issue.

**Table 12: Reduced Time to Issue Level of Deployment**

Level of Deployment	Number of Companies	%
Research	1	3%
Proof of Concept	1	3%
Prototype	1	3%
Implemented in Production	35	92%

**Table 13: Reduced Time to Issue ML Types, Development Source, Decision Influence & Governance**

Machine Learning Techniques Utilized in Reduced Time to Issue

ML Technique	Count	Level of Decision Influence	Count
Deep Learning	0	Automation	32
Ensemble	37	Augmentation	9
Neural Network	1	Support	7
Regularization	15	Other	16
Rule System	7		
Regression	15	<b>Development Source</b>	
Bayesian Methods	0	Developed Internally	29
Decision Trees	2	Developed by a Third-Party	35
Dimensionality Reduction	6	Developed with a 3rd-Party	0
Instance-Based	0		
Clustering	7	<b>Model Governance - Yes</b>	58
Cox Regression	5	<b>Model Governance - No</b>	7
Other	3		

### **Specialty Insurance Products for Certain Conditions Use Case**

Companies were asked, does your company currently use, plan to use, or is exploring the use of AI/ML for Specialty Insurance Products for Certain Conditions?



## Life Insurance Artificial Intelligence/Machine Learning Survey Results

No responding companies are using AI/ML for Specialty Insurance Products.

### **Automated Approval/Automated Denial Use Case**

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Automated Approval/Automated Denial?

**Table 14: Automated Approval/Automated Denial Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Automated Approval/Automated Denial?

Yes	35	71%
No	14	29%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML for Automated Approval/Automated Denial.

**Table 15: Automated Approval/Automated Denial Level of Deployment**

Level of Deployment	Number of Companies	%
Research	5	15%
Proof of Concept	0	0%
Prototype	0	0%
Implemented in Production	29	85%

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

**Table 16: Automated Approval/Automated Denial ML Types, Development Source, Decision Influence & Governance**

Machine Learning Techniques Utilized in Automated Approval/Automated Denial			
ML Technique	Count	Level of Decision Influence	Count
Deep Learning	0	Automation	29
Ensemble	35	Augmentation	11
Neural Network	0	Support	4
Regularization	10	Other	10
Rule System	7		
Regression	12	<b>Development Source</b>	
Bayesian Methods	0	Developed Internally	24
Decision Trees	2	Developed by a Third-Party	28
Dimensionality Reduction	7	Developed with a 3rd-Party	0
Instance-Based	0		
Clustering	7	<b>Model Governance - Yes</b>	46
Cox Regression	3	<b>Model Governance - No</b>	6
Other	4		

### Non-Automated Approval/Non-Automated Denial Decision Automated Denial Use Case

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Non-Automated Approval/Non-Automated Denial?

**Table 17: Non-Automated Approval/Non-Automated Denial Decision Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Non-Automated Approval Decision/Non-Automated Denial Decision?

Yes	27	54%
No	23	46%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML for Non-Automated Approval/Non-Automated Denial.

**Table 18: Non-Automated Approval/Non-Automated Denial Decision Level of Deployment**

Level of Deployment	Number of Companies	%
Research	1	4%
Proof of Concept	0	0%
Prototype	1	4%
Implemented in Production	25	93%

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

**Table 19: Non-Automated Approval/Non-Automated Denial Decision ML Types, Development Source, Decision Influence & Governance**

Machine Learning Techniques Utilized in Non-Automated Approval Decision/Non-Automated Denial Decision			
ML Technique	Count	Level of Decision Influence	Count
Deep Learning	0	Automation	11
Ensemble	25	Augmentation	8
Neural Network	0	Support	11
Regularization	7	Other	8
Rule System	3		
Regression	6	<b>Development Source</b>	
Bayesian Methods	0	Developed Internally	12
Decision Trees	1	Developed by a Third-Party	26
Dimensionality Reduction	2	Developed with a 3rd-Party	0
Instance-Based	0		
Clustering	3	<b>Model Governance - Yes</b>	30
Cox Regression	3	<b>Model Governance - No</b>	7
Other	1		

### Underwriting Risk Class Use Case

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Underwriting Risk Class?

**Table 20: Underwriting Risk Class Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Underwriting Risk Class?

Yes	33	66%
No	17	34%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML for Underwriting Risk Class.

**Table 21: Underwriting Risk Class Level of Deployment**

Level of Deployment	Number of Companies	%
Research	3	9%
Proof of Concept	0	0%
Prototype	1	3%
Implemented in Production	29	88%

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

**Table 22: Underwriting Risk Class ML Types, Development Source, Decision Influence & Governance**

Machine Learning Techniques Utilized in Underwriting Risk Class			
ML Technique	Count	Level of Decision Influence	Count
Deep Learning	0	Automation	29
Ensemble	27	Augmentation	6
Neural Network	0	Support	3
Regularization	12	Other	10
Rule System	6		
Regression	13	<b>Development Source</b>	
Bayesian Methods	1	Developed Internally	23
Decision Trees	1	Developed by a Third-Party	25
Dimensionality Reduction	6	Developed with a 3rd-Party	0
Instance-Based	0		
Clustering	6	<b>Model Governance - Yes</b>	42
Cox Regression	9	<b>Model Governance - No</b>	6
Other	1		

### Other Underwriting-Related Functions Use Case

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Other Underwriting-Related Functions?

**Table 23: Other Underwriting-Related Functions Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Other Underwriting-Related Functions?

Yes	12	24%
No	37	76%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML for Other Underwriting-Related Functions.

**Table 24: Other Underwriting-Related Functions Level of Deployment**

Level of Deployment	Number of Companies	%
Research	2	17%
Proof of Concept	4	33%
Prototype	0	0%
Implemented in Production	6	50%

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

**Table 25: Other Underwriting-Related Functions ML Types, Development Source, Decision Influence & Governance**

Machine Learning Techniques Utilized in Other Underwriting-Related Functions			
ML Technique	Count	Level of Decision Influence	Count
Deep Learning	2	Automation	4
Ensemble	7	Augmentation	0
Neural Network	1	Support	5
Regularization	2	Other	4
Rule System	4		
Regression	2	<b>Development Source</b>	
Bayesian Methods	0	Developed Internally	10
Decision Trees	0	Developed by a Third-Party	3
Dimensionality Reduction	2	Developed with a 3rd-Party	0
Instance-Based	0		
Clustering	3	<b>Model Governance - Yes</b>	9
Cox Regression	1	<b>Model Governance - No</b>	4
Other	2		

**Table 26: Pricing & Underwriting Third Party Data Use**

Data Element	Use Count		Data Source Count			External Data Disclosure		Consumer Dispute Process	
	Yes	No	Internal	External	Both	Yes	No	Yes	No
Credit Based Insurance Scores (CBIS)	20	28	1	19	0	17	27	22	22
Financial Credit Score (FCS)	2	46	0	2	0	4	36	5	35
Other Type of Non-Credit Score (ONCS)	6	42	0	6	0	8	35	10	32
Public Records (PR)	15	32	0	15	0	14	29	16	27
Dempgraphics (DEMO)	24	24	18	5	2	15	28	17	26
Telematics Data Type (TDT)	0	48	0	0	0	3	37	4	36
Driving Behavior (DB)	21	27	0	18	3	21	23	24	20
Biometrics (BIO)	3	45	1	0	2	5	36	6	35
Medical (MED)	41	7	1	26	14	33	11	37	6
Online Media (OLM)	0	48	0	0	0	3	37	4	36
Other: Non-Traditional Data Elements	6	41	3	4	0	6	36	7	35

**Table 27: Pricing & Underwriting Third Party Vendor Identification**

CBIS	FCS	ONCS	PR	DEMO	TDT
Lexis Nexis	TransUnion	Milliman Inteliscript	Employer Characteristics	Internal	None Listed
Milliman Inteliscript		CURV Score	Lexis Nexis	Milliman Inteliscript	
TransUnion			Exam One	Lexis Nexis	
TrueRisk Life Score			TransUnion		
DB	BIO	MED	OLM	Other	
TransUnion (DriverRisk)	Online Interview Metrics	Milliman	None Listed	Employer sentiment metrics	
Lexis Nexis MVR	Milliman	ExamOne		Milliman (Medical/Pharmacy)	
State Dept of Motor Vehicles	Exam One	CRL			
SambaSafety (formerly American Driving Records)					

### Pricing and Underwriting Summary Remarks

Several trends were observed for companies that adopted AI/ML for the pricing and underwriting use cases. They are:

1. Most companies are beyond the research, proof of concept, and prototype stage. They have their AI solutions in production.

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

2. Of the twelve machine learning techniques the survey target to assess the use of by life insurers, most companies mostly utilized the following techniques:
  - a. Ensemble Learning
  - b. Regularization
  - c. Regression
3. Companies were found to mostly deploy AI/ML for automation (no human intervention on execution) and augmentation (advising human decisions). There were few instances where companies were using AI/ML to provide information without suggesting a decision or action.
4. Most companies are either developing AI themselves or letting a third party develop the model. There was only one instance where a company developed an AI model with the help of a third party.
5. Most companies indicated they have a model governance framework in place to govern the development and implementation of pricing and underwriting AI/ML models.
6. Most companies make use of external data and indicated they do not disclose to insureds what external data is accessed and used in their underwriting programs.
7. For pricing and underwriting AI/ML use cases, the third-party vendors/ products frequently mentioned relying on are: (1) Lexis Nexis, (2) Milliman Intelliscript, (3) TrueRisk Life Score, (4) Exam One, and TransUnion.
8. Most companies indicated they do not have a process in place for consumers to dispute data elements.

### COMPANY OPERATIONS: MARKETING USE CASES

The use of AI/ML for specific uses cases were of regulatory interest for the survey. Those use cases are delineated below. The first question posed for each use case was whether the company was currently using, planning, or exploring the use of AI/ML. If the respondent answered “No,” no further follow up questions were posed. If the company responded “Yes,” the follow up questions sought to determine:

- 1) The highest level of deployment of AI/ML for the given use case. The levels included: Research, Proof of Concept, Prototype, Implemented in Production.
- 2) The name of AI/ML models by name supporting the use case and the identification of the following for each named model:
  - a. Machine learning technique embedded in the model
  - b. Whether it was developed internally, by a third-party, or with the aid of a third-party
  - c. Level of decision influenced by the model:
    - i. Automation – No human intervention on execution
    - ii. Augmentation – Model advises human who makes decision – model suggests answer
    - iii. Support – Model provided information but does not suggest decision or action
    - iv. Other – Influence not provided by the three choices above.
  - d. Whether Model Governance is in place

The survey also allowed respondents to enter any additional commentary they wish to further explain their responses. Participants from the pilot study for the survey requested this option be included in the

## **Life Insurance Artificial Intelligence/Machine Learning Survey Results**

design of the survey. The use case sections that follow are primarily for presenting the tabular results. At the conclusion of this section, a list of observations is provided reflecting the major trends in the respondent remarks.

### **MARKETING USE CASES**

This section of the survey asks you to discuss the AI/ML techniques you deploy in select marketing functions. The functions are:

1. Targeted Online Advertising
2. Identification of Recipients of Mail or Phone Advertising
3. Provision of Offers to Existing Customers
4. Identification of Potential Customer Groups
5. Demand Modeling
6. Direct Online Sales
7. Other Marketing-Related Functions

Following these sections, the survey asks you to identify the vendors you engage to supply data for certain data types. The data types are: (1) Credit-Based Insurance Score, (2) Financial Credit Score, (3) Other Type of "Non-Credit" Score, (4) Public Records, (5) Demographic, (6) Telematics Type Data, (7) Driving Behavior, (8) Biometrics, (9) Medical, (10) Online Media, and (11) Other Non-Traditional Data Elements.

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### Target Online Advertising Use Case

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Target Online Advertising.

**Table 28: Target Online Advertising Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Target Online Advertising?

Yes	34	36%
No	60	64%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML for Target Online Advertising

**Table 29: Target Online Advertising Level of Deployment**

Level of Deployment	Number of Companies	%
Research	7	21%
Proof of Concept	3	9%
Prototype	0	0%
Implemented in Production	24	71%

**Table 30: Target Online Marketing Types, Development Source, Decision Influence & Governance**

#### Machine Learning Techniques Utilized in Target Online Advertising

ML Technique	Count	Level of Decision Influence	Count
Deep Learning	1	Automation	38
Ensemble	13	Augmentation	25
Neural Network	3	Support	16
Regularization	5	Other	14
Rule System	12		
Regression	10	<b>Development Source</b>	
Bayesian Methods	1	Developed Internally	8
Decision Trees	5	Developed by a Third-Party	71
Dimensionality Reduction	4	Developed with a 3rd-Party	0
Instance-Based	1		
Clustering	8	<b>Model Governance - Yes</b>	56
Cox Regression	1	<b>Model Governance - No</b>	36
Other	11		



## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### Identification of Recipients of Mail or Phone Advertising Use Case

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Specialty Insurance Products for Certain Conditions?

**Table 31: Identification of Recipients of Mail or Phone Advertising Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Identification of Recipients of Mail or Phone Advertising ?

Yes	27	29%
No	67	71%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML for Identification of Recipients of Mail or Phone Advertising.

**Table 32: Identification of Recipients of Mail or Phone Advertising Level of Deployment**

Level of Deployment	Number of Companies	%
Research	5	19%
Proof of Concept	1	4%
Prototype	2	7%
Implemented in Production	19	70%

**Table 33: Identification of Recipients of Mail or Phone Advertising ML Types, Development Source, Decision Influence & Governance**

Machine Learning Techniques Utilized in Identification of Recipients of Mail or Phone Advertising

ML Technique	Count	Level of Decision Influence	Count
Deep Learning	0	Automation	12
Ensemble	43	Augmentation	63
Neural Network	2	Support	7
Regularization	14	Other	1
Rule System	0		
Regression	35	<b>Development Source</b>	
Bayesian Methods	2	Developed Internally	55
Decision Trees	7	Developed by a Third-Party	17
Dimensionality Reduction	5	Developed with a 3rd-Party	0
Instance-Based	1		
Clustering	2	<b>Model Governance - Yes</b>	75
Cox Regression	1	<b>Model Governance - No</b>	4
Other	6		

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### Provision of Offers to Existing Customers Use Case

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Provision of Offers to Existing Customers?

**Table 34: Provision of Offers to Existing Customers Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Provision of Offers to Existing Customers ?

Yes	24	26%
No	70	74%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML for Provision of Offers to Existing Customers.

**Table 35: Provision of Offers to Existing Customers Level of Deployment**

Level of Deployment	Number of Companies	%
Research	3	13%
Proof of Concept	0	0%
Prototype	0	0%
Implemented in Production	21	88%

**Table 36: Provision of Offers to Existing Customers ML Types, Development Source, Decision Influence & Governance**

Machine Learning Techniques Utilized in Provision of Offers to Existing Customers

ML Technique	Count	Level of Decision Influence	Count
Deep Learning	1	Automation	3
Ensemble	18	Augmentation	37
Neural Network	3	Support	10
Regularization	10	Other	0
Rule System	5		
Regression	14	<b>Development Source</b>	
Bayesian Methods	4	Developed Internally	33
Decision Trees	3	Developed by a Third-Party	11
Dimensionality Reduction	6	Developed with a 3rd-Party	0
Instance-Based	1		
Clustering	4	<b>Model Governance - Yes</b>	47
Cox Regression	1	<b>Model Governance - No</b>	3
Other	3		

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### Identification of Potential Customer Groups Use Case

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Non-Automated Approval/Non-Automated Denial?

**Table 37: Identification of Potential Customer Groups Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Identification of Potential Customer Groups ?

Yes	26	28%
No	68	72%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML for Identification of Potential Customer Groups.

**Table 38: Identification of Potential Customer Groups Level of Deployment**

Level of Deployment	Number of Companies	%
Research	1	4%
Proof of Concept	6	23%
Prototype	1	4%
Implemented in Production	18	69%

**Table 39: Identification of Potential Customer Groups ML Types, Development Source, Decision Influence & Governance**

Machine Learning Techniques Utilized in Identification of Potential Customer Groups			
ML Technique	Count	Level of Decision Influence	Count
Deep Learning	2	Automation	6
Ensemble	24	Augmentation	38
Neural Network	5	Support	20
Regularization	9	Other	0
Rule System	4		
Regression	13	<b>Development Source</b>	
Bayesian Methods	2	Developed Internally	24
Decision Trees	7	Developed by a Third-Party	32
Dimensionality Reduction	6	Developed with a 3rd-Party	0
Instance-Based	3		
Clustering	14	<b>Model Governance - Yes</b>	52
Cox Regression	1	<b>Model Governance - No</b>	12
Other	5		

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### Demand Modeling Use Case

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Demand Modeling?

**Table 40: Demand Modeling Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Demand Modeling ?

Yes	13	14%
No	81	86%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML for Demand Modeling.

**Table 41: Demand Modeling Level of Deployment**

Level of Deployment	Number of Companies	%
Research	3	23%
Proof of Concept	0	0%
Prototype	1	8%
Implemented in Production	9	69%

**Table 42: Demand Modeling ML Types, Development Source, Decision Influence & Governance**

Machine Learning Techniques Utilized in Demand Modeling			
ML Technique	Count	Level of Decision Influence	Count
Deep Learning	1	Automation	1
Ensemble	10	Augmentation	18
Neural Network	1	Support	4
Regularization	6	Other	0
Rule System	4		
Regression	11	<b>Development Source</b>	
Bayesian Methods	2	Developed Internally	6
Decision Trees	5	Developed by a Third-Party	16
Dimensionality Reduction	0	Developed with a 3rd-Party	0
Instance-Based	0		
Clustering	2	<b>Model Governance - Yes</b>	18
Cox Regression	0	<b>Model Governance - No</b>	0
Other	2		

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### Direct Online Sales Use Case

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Online Sales?

**Table 43: Direct Online Sales Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Direct Online Sales?

Yes	11	12%
No	83	88%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML for Direct Online Sales.

**Table 44: Direct Online Sales Level of Deployment**

Level of Deployment	Number of Companies	%
Research	2	18%
Proof of Concept	1	9%
Prototype	1	9%
Implemented in Production	7	64%

**Table 45: Direct Online Sales ML Types, Development Source, Decision Influence & Governance**

Machine Learning Techniques Utilized in Direct Online Sales

ML Technique	Count	Level of Decision Influence	Count
Deep Learning	0	Automation	4
Ensemble	9	Augmentation	19
Neural Network	2	Support	3
Regularization	5	Other	0
Rule System	4		
Regression	11	<b>Development Source</b>	
Bayesian Methods	2	Developed Internally	5
Decision Trees	3	Developed by a Third-Party	16
Dimensionality Reduction	3	Developed with a 3rd-Party	0
Instance-Based	1		
Clustering	4	<b>Model Governance - Yes</b>	23
Cox Regression	1	<b>Model Governance - No</b>	2
Other	3		

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### Other Marketing-Related Functions Use Case

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Other Marketing-Related Functions?

**Table 46: Other Marketing-Related Functions Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Other Marketing-Related Functions?

Yes	30	32%
No	64	68%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML for Other Marketing-Related Functions.

**Table 47: Other Marketing-Related Functions Level of Deployment**

Level of Deployment	Number of Companies	%
Research	11	37%
Proof of Concept	6	20%
Prototype	2	7%
Implemented in Production	11	37%

**Table 48: Other Marketing-Related Functions ML Types, Development Source, Decision Influence & Governance**

Machine Learning Techniques Utilized in Other Marketing-Related Functions

ML Technique	Count	Level of Decision Influence	Count
Deep Learning	6	Automation	6
Ensemble	12	Augmentation	11
Neural Network	6	Support	28
Regularization	12	Other	2
Rule System	0		
Regression	3	<b>Development Source</b>	
Bayesian Methods	11	Developed Internally	16
Decision Trees	4	Developed by a Third-Party	26
Dimensionality Reduction	3	Developed with a 3rd-Party	0
Instance-Based	1		
Clustering	2	<b>Model Governance - Yes</b>	35
Cox Regression	3	<b>Model Governance - No</b>	12
Other	8		

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**Table 49: Marketing Third-Party Data Use**

Data Element	Use Count		Data Source Count		
	Yes	No	Internal	External	Both
Credit Based Insurance Scores (CBIS)	0	92	0	0	0
Financial Credit Score (FCS)	1	91	0	0	0
Other Type of Non-Credit Score (ONCS)	7	85	1	5	1
Public Records (PR)	16	76	1	15	0
Dempgraphics (DEMO)	42	50	10	11	20
Telematics Data Type (TDT)	0	91	0	0	0
Driving Behavior (DB)	5	87	2	2	0
Biometrics (BIO)	1	90	1	0	0
Medical (MED)	7	85	3	2	2
Online Media (OLM)	19	74	1	11	6
Other: Non-Traditional Data Elements	12	79	4	6	2

**Table 50: Marketing Third-Party Vendor Identification**

CBIS	FCS	ONCS	PR	DEMO
Bing Ads	Acxiom	Acxiom	Acxiom	AARP Services (ASI)
Google Ads	TransUnion	ChoreoGraph: AmeriLink Data	Census Bureau	Acxiom
LinkedIn		Choreograph: Census Data	Choreograph: Census Data	Adobe
Meta		Choreograph: Summarized Credit Data	EASI census	AGS
Securian		Epsilon	Facebook	Census Bureau
The Trade Desk		SAS	Google	ChoreoGraph: AmeriLink Data
		TransUnion Data	IXI AssetMix	Choreograph: Census Data
			IXI WealthComplete	Choreograph: Summarized Credit Data
			Neustar	Credit Unions
			SAS	DataAxle
				EASI Census
				Experian
				Facebook
				Google
				IXI AssetMix
				IXI WealthComplete
				Merkle
				Neustar
				SAS
				TransUnion
				TransUnion Data
				US Religion Census
				Yahoo

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DB	BIO	TTD	OLM	Other
LexisNexis	SAS	None Listed	Acxiom	AARP Services (ASI)
SAS			Alphabet	Acxiom
Transunion			Bing	Choreograph
			Facebook	solicitations in the past 3, 6, 9, 12 and 24 months
			Facebook/Instagram	Credit Unions
			Google	Experian
			LinkedIn	potential ad content developed by [Company] are run through the model.
			Merkle	Prior Solicitation Counts
			Meta	SAS
			Neustar	aspects of insurance carriers, products, and needs.
			Online Platforms	favorability/effectiveness/sentiment target used to train model
			Streaming Platforms	responses from Employers and Brokers to curated survey questions
			The Trade Desk	
			TikTok	
			x	
			Xandr	
			Yahoo	

### Marketing Summary Remarks

Several trends were observed for companies that adopted AI/ML for the marketing use cases. They are:

1. Most companies are beyond the research, proof of concept, and prototype stage. They have their AI solutions in production, but a significant number of companies are researching AI uses as well.
2. Of the twelve machine learning techniques the survey target to assess the use of by life insurers, most companies mostly utilized the following techniques:
  - a. Ensemble Learning
  - b. Regularization
  - c. Regression

Rules-based systems and decision trees followed the three above in usage.

3. Companies were found to mostly deploy AI/ML for augmentation (advising human decisions) and support (providing information without suggesting a decision or action). Automation (no human intervention on execution) was the third most used approach.
4. Similar to pricing and underwriting, most companies are either developing AI themselves or letting a third-party develop the model. There were no instances where a company developed an AI model with the help of a third party.
5. Most companies indicated they have a model governance framework in place to govern the development and implementation of marketing AI/ML models.
6. Companies used a myriad of third-party vendors for marketing, such as (1) Lexis Nexis, (2) TransUnion, (3) Axiom, (4) Google, (5) Yahoo, (6) LinkedIn, (7) AARP, (8) Facebook, and the others listed in Table 50. Some were surprising, such as the US Religion Census.



## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### COMPANY OPERATIONS: RISK MANAGEMENT

The use of AI/ML for specific uses cases were of regulatory interest for the survey. Those use cases are delineated below. The first question posed for each use case was whether the company was currently using, planning, or exploring the use of AI/ML. If the respondent answered “No,” no further follow up questions were posed. If the company responded “Yes,” the follow up questions sought to determine:

- 1) The highest level of deployment of AI/ML for the given use case. The levels included: Research, Proof of Concept, Prototype, Implemented in Production.
- 2) The name of AI/ML models by name supporting the use case and the identification of the following for each named model:
  - a. Machine learning technique embedded in the model
  - b. Whether it was developed internally, by a third-party, or with the aid of a third-party
  - c. Level of decision influenced by the model:
    - i. Automation – No human intervention on execution
    - ii. Augmentation – Model advises human who makes decision – model suggests answer
    - iii. Support – Model provided information but does not suggest decision or action
    - iv. Other – Influence not provided by the three choices above.
  - d. Whether Model Governance is in place

The survey also allowed respondents to enter any additional commentary they wish to further explain their responses. Participants from the pilot study for the survey requested this option be included in the design of the survey. The use case sections that follow are primarily for presenting the tabular results. At the conclusion of this section, a list of observations is provided reflecting the major trends in the respondent remarks.

### RISK MANAGEMENT USE CASES

This section of the survey companies to discuss the AI/ML techniques deployed in select risk management functions. The functions are:

1. Wearable Devices
2. Wellness Initiatives
3. Discount Medical Programs
4. Technology to Detect Smoking
5. Disease Detection
6. Other Risk Management Functions

Following these sections, the survey asks to identify the vendors engaged to supply data for certain data types. The data types are: (1) Credit-Based Insurance Score, (2) Financial Credit Score, (3) Other Type of "Non-Credit" Score, (4) Public Records, (5) Demographic, (6) Telematics Type Data, (7) Driving Behavior, (8) Biometrics, (9) Medical, (10) Online Media, and (11) Other Non-Traditional Data Elements.

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### Wearable Devices Use Case

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Wearable Devices.

**Table 51: Wearable Devices Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Wearable Devices?

Yes	3	3%
No	91	97%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML for Wearable Devices.

**Table 52: Wearable Devices Level of Deployment**

Level of Deployment	Number of Companies	%
Research	3	100%
Proof of Concept	0	0%
Prototype	0	0%
Implemented in Production	0	0%

**Table 53: Wearable ML Devices: Types, Development Source, Decision Influence & Governance**

Machine Learning Techniques Utilized in Wearable Devices

ML Technique	Count	Level of Decision Influence	Count
Deep Learning	0	Automation	3
Ensemble	0	Augmentation	0
Neural Network	0	Support	0
Regularization	0	Other	0
Rule System	0		
Regression	0	<b>Development Source</b>	
Bayesian Methods	0	Developed Internally	3
Decision Trees	0	Developed by a Third-Party	0
Dimensionality Reduction	0	Developed with a 3rd-Party	0
Instance-Based	0		
Clustering	0	<b>Model Governance - Yes</b>	3
Cox Regression	0	<b>Model Governance - No</b>	0
Other	1		

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### Wellness Initiatives Use Case

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Wellness Initiatives?

**Table 54: Wellness Initiatives Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Wellness Initiatives?

Yes	4	4%
No	90	96%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML for Wellness Initiatives.

**Table 55: Wellness Initiatives Level of Deployment**

Level of Deployment	Number of Companies	%
Research	4	100%
Proof of Concept	0	0%
Prototype	0	0%
Implemented in Production	0	0%

**Table 56: Wellness Initiatives ML Types, Development Source, Decision Influence & Governance**

Machine Learning Techniques Utilized in Wellness Initiatives			
ML Technique	Count	Level of Decision Influence	Count
Deep Learning	0	Automation	0
Ensemble	0	Augmentation	0
Neural Network	0	Support	0
Regularization	0	Other	0
Rule System	0		
Regression	0	<b>Development Source</b>	
Bayesian Methods	0	Developed Internally	0
Decision Trees	0	Developed by a Third-Party	0
Dimensionality Reduction	0	Developed with a 3rd-Party	0
Instance-Based	0		
Clustering	0	<b>Model Governance - Yes</b>	0
Cox Regression	0	<b>Model Governance - No</b>	0
Other	1		

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### Discount Medical Programs Use Case

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Discount Medical Programs?

**Table 57: Discount Medical Programs Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Discount Medical Programs?

Yes	0	0%
No	94	100%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML for Discount Medical Programs.

**Table 58: Discount Medical Programs Level of Deployment**

Level of Deployment	Number of Companies	%
Research	0	N/A
Proof of Concept	0	N/A
Prototype	0	N/A
Implemented in Production	0	N/A

**Table 59: Discount Medical Programs ML Types, Development Source, Decision Influence & Governance**

Machine Learning Techniques Utilized in Discount Medical Programs			
ML Technique	Count	Level of Decision Influence	Count
Deep Learning	0	Automation	0
Ensemble	0	Augmentation	0
Neural Network	0	Support	0
Regularization	0	Other	0
Rule System	0		
Regression	0	<b>Development Source</b>	
Bayesian Methods	0	Developed Internally	0
Decision Trees	0	Developed by a Third-Party	0
Dimensionality Reduction	0	Developed with a 3rd-Party	0
Instance-Based	0		
Clustering	0	<b>Model Governance - Yes</b>	0
Cox Regression	0	<b>Model Governance - No</b>	0
Other	1		

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### Technology to Detect Smoking Use Case

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Technology to Detect Smoking?

**Table 60: Technology to Detect Smoking Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Technology to Detect Smoking?

Yes	2	2%
No	93	98%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML for Technology to Detect Smoking.

**Table 61: Technology to Detect Smoking Level of Deployment**

Level of Deployment	Number of Companies	%
Research	1	50%
Proof of Concept	0	0%
Prototype	0	0%
Implemented in Production	1	50%

**Table 62: Technology to Detect Smoking ML Types, Development Source, Decision Influence & Governance**

Machine Learning Techniques Utilized in Technology to Detect Smoking

ML Technique	Count	Level of Decision Influence	Count
Deep Learning	0	Automation	1
Ensemble	1	Augmentation	0
Neural Network	0	Support	0
Regularization	0	Other	0
Rule System	0		
Regression	0	<b>Development Source</b>	
Bayesian Methods	0	Developed Internally	1
Decision Trees	1	Developed by a Third-Party	0
Dimensionality Reduction	0	Developed with a 3rd-Party	0
Instance-Based	0		
Clustering	0	<b>Model Governance - Yes</b>	1
Cox Regression	0	<b>Model Governance - No</b>	0
Other	1		

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### Technology for Disease Detection Use Case

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Technology for Disease Detection?

**Table 63: Technology for Disease Detection Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Disease Detection?

Yes	2	2%
No	92	98%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML for Technology for Disease Detection.

**Table 64: Technology for Disease Detection Level of Deployment**

Level of Deployment	Number of Companies	%
Research	0	0%
Proof of Concept	0	0%
Prototype	0	0%
Implemented in Production	2	100%

**Table 65: Technology for Disease Detection ML Types, Development Source, Decision Influence & Governance**

Machine Learning Techniques Utilized in Disease Detection

ML Technique	Count	Level of Decision Influence	Count
Deep Learning	0	Automation	2
Ensemble	2	Augmentation	1
Neural Network	0	Support	0
Regularization	0	Other	0
Rule System	0		
Regression	1	<b>Development Source</b>	
Bayesian Methods	0	Developed Internally	2
Decision Trees	0	Developed by a Third-Party	1
Dimensionality Reduction	0	Developed with a 3rd-Party	0
Instance-Based	0		
Clustering	0	<b>Model Governance - Yes</b>	2
Cox Regression	1	<b>Model Governance - No</b>	1
Other	1		

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### Other Risk Management-Related Functions Use Case

The following table summarizes the responses to the question: Does your company currently use, plan to use, or is exploring the use of AI/ML for Other Risk Management-Related Functions?

**Table 66: Other Risk Management-Related Functions Use Case**

Does your company currently use, plan to use, or is exploring the use of AI/ML for Other Risk Management Functions?

Yes	4	4%
No	89	96%

The results in the next two tables only reflect results for those who responded “Yes” to using AI/ML for Other Risk Management Related Functions.

**Table 67: Other Risk Management-Related Functions Level of Deployment**

Level of Deployment	Number of Companies	%
Research	0	0%
Proof of Concept	0	0%
Prototype	0	0%
Implemented in Production	4	100%

**Table 68: Other Risk Management-Related Functions ML Types, Development Source, Decision Influence & Governance**

Machine Learning Techniques Utilized in Other Risk Management Functions

ML Technique	Count	Level of Decision Influence	Count
Deep Learning	0	Automation	0
Ensemble	2	Augmentation	0
Neural Network	0	Support	3
Regularization	0	Other	0
Rule System	0		
Regression	1	<b>Development Source</b>	
Bayesian Methods	0	Developed Internally	3
Decision Trees	0	Developed by a Third-Party	0
Dimensionality Reduction	0	Developed with a 3rd-Party	0
Instance-Based	0		
Clustering	0	<b>Model Governance - Yes</b>	3
Cox Regression	0	<b>Model Governance - No</b>	0
Other	1		

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

**Table 69: Risk Management Third-Party Data Use**

Data Element	Use Count		Data Source Count		
	Yes	No	Internal	External	Both
Credit Based Insurance Scores (CBIS)	2	75	0	2	0
Financial Credit Score (FCS)	0	77	0	0	0
Other Type of Non-Credit Score (ONCS)	0	78	0	0	0
Public Records (PR)	3	74	0	3	0
Dempgraphics (DEMO)	2	76	2	0	0
Telematics Data Type (TDT)	0	77	0	0	0
Driving Behavior (DB)	2	75	0	2	0
Biometrics (BIO)	0	77	0	0	0
Medical (MED)	3	75	0	3	0
Online Media (OLM)	0	77	0	0	0
Other: Non-Traditional Data Elements	1	76	0	1	0

**Table 70: Risk Management Third-Party Vendor Identification**

CBIS	FCS	ONCS	PR	DEMO
Equifax	None Listed	None Listed	LexisNexis	None Listed
Experian				
LexisNexis				
Transunion				

  

DB	BIO	TTD	OLM	Other
State Department of Motor Vehicles	None Listed	None Listed	None Listed	Fitbit
				Garmin
				Google Fit
				MapMyFitness
				Oura
				Peloton
				Polar
				Samsung
				Strava
				Whoop

### **Risk Management Summary Remarks**

1. The majority of companies were not using AL/ML for any of the following use cases:
  - a. Wearable Devices
  - b. Wellness Initiatives
  - c. Discount Medical Programs
  - d. Technology to Detect Smoking
  - e. Disease Detection
  - f. Other Risk Management Functions

Therefore, there are few company insights in these areas.



## Life Insurance Artificial Intelligence/Machine Learning Survey Results

2. Of the few companies using AI/ML in risk management, models are either in production or in the research phase.
3. Most companies utilized the following techniques:
  - a. Ensemble Learning
  - b. Regularization
  - c. Regression
  - d. Decision Trees
4. Companies were found to mostly deploy AI/ML for automation (no human intervention on execution). Support (providing information without suggesting a decision or action) was the third most used approach.
5. Companies were found to develop AI internally.
6. Most companies indicated they have a model governance framework in place to govern the development and implementation of risk management AI/ML models.
7. Companies used a myriad of third-party vendors for marketing, such as (1) Lexis Nexis, (2) TransUnion, (3) Experian, (4) Equifax, (5) DMV, (6) Fitbit, (7) Garmin, (8) Peloton, (9) Samsung and the other wearable data providers listed in Table 73.

### GOVERNANCE

The purpose of the questions in this section is to obtain a better understanding regarding a company's awareness of specific areas tied to selected categories in the NAIC's AI Principles. While companies may consider a principle, the governance responses represent whether the company has the principles "documented" within its governance program.

#### NAIC AI Principles Compliance

If you are using data, scores and/or AI/ML models aggregated or developed by a third-party, do those contracts include any conditions that would limit disclosure or otherwise limit transparency to regulators?

**Table 71: Contract Provisions Limiting Disclosures to Regulators**

Transparency Limitation Disclosures					
Pricing & Underwriting		Marketing		Risk Management	
Yes	No	Yes	No	Yes	No
5	80	6	77	3	74
	94%		93%		96%

If model governance is in place, insurers were asked to check (Yes/No) if the following areas are documented in governance programs. Refer to the NAIC AI Principles for a description of each of the five NAIC AI principles reflected below and the Survey Guidance document more information regarding completing this question. PLEASE NOTE: It is expected for the governance levels and maturity to be commensurate with the maturity level and risk associated with the program.

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

**Table 72: Companies Compliant with NAIC AI Principles**

NAIC AI Principles	Pricing & Underwriting		Marketing		Risk Management	
	Yes	No	Yes	No	Yes	No
Fair and Ethical	2	1	2	1	2	1
Accountable	2	1	2	1	2	1
Compliant	2	1	2	1	2	1
Transparent	2	1	2	1	2	1
Secure, Safe and Robust	2	1	2	1	2	1

### **Accountability for Data Algorithm's Compliance with the Law**

Have you adopted practices with respect to Accountability for Data Algorithms' Compliance with Laws for each operational area?

**Table 73: Accountability for Data Algorithms' Compliance with Laws**

Accountability for Data Algorithms' Compliance with Laws					
Pricing & Underwriting		Marketing		Risk Management	
Yes	No	Yes	No	Yes	No
47	47	42	52	25	68

This table shows individual responses to company practices with respect to this topic.

### **Accountability for Data Algorithms' Intended Impacts**

Have you adopted practices with respect to Accountability for Data Algorithms' Intended Impacts for each operational area below?

**Table 74: Accountability for Data Algorithms' Intended Impacts**

Accountability for Data Algorithms' Intended Impacts					
Pricing & Underwriting		Marketing		Risk Management	
Yes	No	Yes	No	Yes	No
47	47	41	53	28	65

This table shows individual responses to company practices with respect to this topic.

### **Accountability for Data Algorithms' Unintended Impacts**

Have you adopted practices with respect to Accountability for Data Algorithms' Unintended Impacts for each operational area below?

**Table 75: Accountability for Data Algorithms' Unintended Impacts**

Accountability for Data Algorithms' Unintended Impacts					
Pricing & Underwriting		Marketing		Risk Management	
Yes	No	Yes	No	Yes	No
46	49	40	55	27	67

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

This table shows individual responses to company practices with respect to this topic.

### **Accountability Ensure Compliance with Laws Including those Related to Unfair Discrimination**

Have you adopted practices with respect to Accountability for Appropriate Resources and Knowledge Involved to Ensure Compliance with Laws Including those Related to Unfair Discrimination for each operational area below?

**Table 76: Accountability for Appropriate Resources and Knowledge Involved to Ensure Compliance with Laws Including those Related to Unfair Discrimination**

Accountability for Compliance with Laws (Discrimination)					
Pricing & Underwriting		Marketing		Risk Management	
Yes	No	Yes	No	Yes	No
53	42	48	47	34	0

This table shows individual responses to company practices with respect to this topic.

### **Ensuring Transparency with Appropriate Disclosures Specific to Data Being Used and Method for Appeal and Recourse Related to Inaccurate Data**

Have you adopted practices with respect to Ensuring Transparency with Appropriate Disclosures Including Notice to Consumers Specific to Data Being Used and Methods for Appeal and Recourse Related to Inaccurate Data for each operational area below?

**Table 77: Ensure Transparency with Appropriate Disclosures Including Notice to Consumers Specific to Data Being Used and Methods for Appeal and Recourse Related to Inaccurate Data**

Ensuring Transparency of Data and Methods for Consumer Appeals					
Pricing & Underwriting		Marketing		Risk Management	
Yes	No	Yes	No	Yes	No
56	39	39	56	29	65

This table shows individual responses to company practices with respect to this topic.

### **AI Systems are Secure, Safe and Robust including Decision Traceability and Security and Privacy Risk Protections**

Have you adopted practices with respect to AI Systems are Secure, Safe and Robust including Decision Traceability and Security and Privacy Risk Protections for each operational area below?

**Table 78: Adopted practices with respect to AI Systems are Secure, Safe and Robust including Decision Traceability and Security and Privacy Risk Protections**

AI Systems Practices that are Secure, Safe and Robust					
Pricing & Underwriting		Marketing		Risk Management	
Yes	No	Yes	No	Yes	No
49	46	44	51	26	68

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### AI Guidance for Other Standards

The results in the next three tables relate to governance frameworks.

**Table 79: Do you follow some other existing standards or guidance in regard to governance framework**

Other existing guidance in regard to governance framework					
Pricing & Underwriting		Marketing		Risk Management	
Yes	No	Yes	No	Yes	No
40	54	39	55	30	63

**Table 80: Development Source of Existing Standards or Guidance Governance Framework**

	Development Source		
	Internal	Third-Party	Both
Pricing & Underwriting	24	1	17
Marketing	25	2	14
Risk Management	19	2	11

# Life Insurance Artificial Intelligence/Machine Learning Survey Results

**Table 81: Third-Party Providers of Governance Framework**

Pricing & Underwriting	
Name of the Third-Party	Components Provided
Actuarial Standards Board	Fairness; Accountability; Explainability; Security, Trust; Robustness
American Academy of Actuaries	Mg Policy; Privacy Controls Library; Dg Policy
ASOP-56	NAIC Ai Principles; Nist Ai Rmf; SOA Asop 56; Co Sb21-169, Etc
Colorado Department of Insurance	NAIC's Principles On Artificial Intelligence, Colorado Sb21-169 (2021), The Nist Ai Risk Management Framework/Playbook, The White House Blueprint For An Ai Bill Of Rights, Microsoft's Responsible Ai Principles
DAMA	Nist Privacy Framework; Nist Cybersecurity Framework; Nist Special Publications (Sp) 800 Series, Including, Among Others: 800-41; 800-52; 800-53 Rev5; 800-57; 800-63; 800-131A  Iso/iec 27000 Family, Including Iso 27001 & 27002 Sr 11-7 Valuation Manual Vm-G Governance Criteria For Principle-Based Reserves, Â§ 3 Asop Nos 21, 23, 24, 56 Model Governance Practice Note & Checklist: Some Considerations For Practice Life Actuaries  Federal And State Regulatory Guidance, Including Regulations, Standards, Guidance, Case Law, And Enforcement Decisions
Deloitte	Principles
Emerging regulations	Principles And Policies
Federal and state agencies and regulatory entities	SOA - Actuarial Standards Of Practice (Asop), Standard Statistical Practice Applied To Model Development
Federal Reserve Board & Office of the Comptroller	SOA - Actuarial Standards Of Practice (Asop); Standard Statistical Practice Applied To Model Development
International Organization for Standardization (ISO)/ International Electrotechnical Commission (IEC)	The Company Is Not Using A Third-Party Governance Framework The Company, However, Is Considering Various Frameworks Published By Organizations Such As The National Institute Of Standards And Technology (Nist) And May Leverage Components From Those Frameworks
Internet Engineering Task Force (IETF)	
LexisNexis	
Microsoft	
NAIC	
National Institute of Standards & Technology (NIST)	
OpenID	
SOA	
SR11-7	
The White House	
TransUnion	

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

Marketing	
Name of the Third-Party	Components Provided
Actuarial Standards Board	Fairness; Accountability; Explainability; Security, Trust; Robustness; Socially Beneficial; Uphold High Standards Of Scientific Excellence
Colorado Department of Insurance	NAIC Ai Principles Nist Ai Rmf SOA Asop 56 Co Sb21-169, Etc
Deloitte	NAIC's Principles On Artificial Intelligence, Colorado Sb21-169 (2021), The Nist Ai Risk Management Framework/Playbook, The White House Blueprint For An Ai Bill Of Rights, Microsoft's Responsible Ai Principles
Emerging regulations	Nist Privacy Framework; Nist Cybersecurity Framework; Nist Special Publications (Sp) 800 Series, Including, Among Others: 800-41; 800-52; 800-53 Rev5; 800-57; 800-63; 800-131A  Iso/Iec 27000 Family, Including Iso 27001 & 27002  Federal And State Regulatory Guidance, Including Regulations, Standards, Guidance, Case Law, And Enforcement Decisions
Facebook	Principles And Policies
Facebook Ads	
Federal and state agencies and regulatory entities	The Company Is Not Using A Third-Party Governance Framework The Company, However, Is Considering Various Frameworks Published By Organizations Such As The National Institute Of Standards And Technology (Nist) And May Leverage Components From Those Frameworks
Federal Reserve Board & Office of the Comptroller	
Google	
Google Ads	
International Organization for Standardization (ISO)/International Electrotechnical Commission (IEC)	
Internet Engineering Task Force (IETF)	
Microsoft	
NAIC	
National Institute of Standards & Technology (NIST)	
OpenID	

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

Risk Management	
Name of the Third-Party	Components Provided
Actuarial Standards Board	Artificial Intelligence Principals
Deloitte	Fairness; Accountability; Explainability; Security, Trust; Robustness
Emerging regulations	NAIC Ai Principles Nist Ai Rmf SOA Asop 56 Co Sb21-169, Etc
Federal and state agencies and regulatory entities	Nist Privacy Framework; Nist Cybersecurity Framework; Nist Special Publications (Sp) 800 Series, Including, Among Others: 800-41; 800-52; 800-53 Rev5; 800-57; 800-63; 800-131A  Iso/iec 27000 Family, Including Iso 27001 & 27002 Sr 11-7 Valuation Manual Vm-G Governance Criteria For Principle-Based Reserves Asop Nos 21, 23, 24, 56  Model Governance Practice Note & Checklist: Some Considerations For Practice Life Actuaries  Federal And State Regulatory Guidance, Including Regulations, Standards, Guidance, Case Law, And Enforcement Decisions
Federal Reserve Board & Office of the Comptroller	Principles And Policies
International Organization for Standardization (ISO)/International Electrotechnical Commission (IEC)	
Internet Engineering Task Force (IETF)	SOA - Actuarial Standards Of Practice (ASOP), Standard Statistical Practice Applied To Model Development
LexisNexis	SOA - Actuarial Standards Of Practice (ASOP); Standard Statistical Practice Applied To Model Development
NAIC	
National Institute of Standards & Technology (NIST)	
OpenID	
SOA	
TransUnion	

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### AI Governance - Consumer Data Disclosures

Companies were asked two questions: “What is the process, if any, that your company has for providing consumers with the data elements used in consumer impact models?” and “What do you do to ensure compliance with regulatory frameworks, such as Model 880 and the Unfair Trade Practices Act, when using non FCRA data?” Written responses for each operational area can be found in Appendix I.

### AI Governance – Non-FCRA Data

The following tables summarize the responses regarding consumers awareness of non-FCRA data use and their ability to correct data not included in FCRA. Followed by company responses to the question “If you are using data not included in FCRA, do consumers have an opportunity to correct?”

**Table 82: Non-FCRA Data Disclosure**

Non-FCRA Data Disclosure					
Pricing & Underwriting		Marketing		Risk Management	
Yes	No	Yes	No	Yes	No
38	55	34	59	21	72

**Table 83: Non-FCRA Data Corrections**

Non-FCRA Data Corrections					
Pricing & Underwriting		Marketing		Risk Management	
Yes	No	Yes	No	Yes	No
37	43	27	52	20	58

### Open- Ended Governance Questions

The companies were asked to respond to open-ended questions to address the following governance issues:

- A. Accountability for Data Algorithms' Compliance with Laws.
- B. Accountability for Data Algorithms' Intended Impacts
- C. Accountability for Data Algorithms' Unintended Impacts
- D. Appropriate Resources and Knowledge Involved to Ensure Compliance with Laws Including those Related to Unfair Discrimination
- E. Ensure Transparency with Appropriate Disclosures Including Notice to Consumers Specific to Data Being Used and Methods for Appeal and Recourse Related to Inaccurate Data
- F. AI Systems are Secure, Safe and Robust including Decision Traceability and Security and Privacy Risk Protections
- G. Processes for Providing Consumers with Data Elements Used in Consumer Impact Models Consumer Data Disclosures
- H. Practices for Ensuring Compliance with Regulatory Frameworks in the Application of Non-FCRA Data
- I. Processes for making consumers aware of non-FCRA data collection, when used & how used
- J. The extent to which human intelligence influences the decision making based on the AI/ML results? How much human intervention is involved?



## Life Insurance Artificial Intelligence/Machine Learning Survey Results

The company written responses to these issues are appended in Appendix I.

**Table 84: Adverse and Contested Underwriting Decision Processes**

Underwriting Concern	Yes	No
Do you have a process for applicants for life insurance to contest an adverse underwriting decision?	74	20
Do you keep a log of the number of contested	38	56

### **Governance Summary Remarks**

Several trends were observed for companies that adopted AI/ML for the marketing use cases. They are:

1. Most companies indicated that they are not subject to contract provisions that limit their disclosures to regulators. This was true for more than 90% of the companies.
2. Most of the companies opted not to answer the question regarding compliance with the NAIC AI principles. Of the companies that did respond, two-thirds indicated they were compliant, while a third indicated they were not compliant.
3. Most companies indicated they have not adopted practices with respect to the accountability for data algorithms compliance with laws for marketing and risk management. Half of the companies indicated they had adopted practices with respect to accountability for data algorithms compliance with laws while the other half indicated they had not.
4. It was a similar situation for adopting practices with respect to the accountability for data algorithms intended impacts in each of the operational areas. More than half had not adopted practices in marketing and risk management while the split was even for pricing and underwriting.
5. Regarding practices for unintended impacts of data and algorithms, more than half the companies had not adopted practices in pricing and underwriting, marketing, and risk management.
6. More than half of the companies indicated they had adopted practices with respect to the accountability for appropriate resources and knowledge involved to ensure compliance with laws and including those related to unfair discrimination. However, the companies indicating they had adoptive practices was only marginally greater than 50%.
7. More than half of the companies indicated adopting practices with respect to ensuring transparency with appropriate disclosures including notices to consumers specific data being used and methods for appeal and recourse related to inaccurate data in pricing and underwriting. However, in marketing and risk management more than half indicated not having adopted such practices.
8. More than half the companies indicated they have not adopted practices with respect to AI systems being secure, safe, and robust including decision traceability and security and privacy risk protections in all the operational areas.
9. More than half of the companies indicated they do not follow some other existing standard or guidance regarding a governance framework in all the operational areas. Companies indicated they followed their own internally developed framework or that of a parent company. See table 83. Table 84 contains a listing of the third parties companies employed to develop governance frameworks and the frameworks components provided by each operational area. Listed among the third party providers are the (1) Actuarial Standards Board, (2) Colorado Department of Insurance, (3) NAIC, (4) Federal Reserve board and office of the Comptroller, (5) international

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- organization for standardization, (6) National Institute of Standards and Technology, (7) Lexis Nexis, (8) TransUnion, (9) Microsoft, (10) The White House, and, surprisingly, (11) Facebook.
10. Finally, companies were asked if they disclose the use of non-FCRA data to consumers and allowed them to make any corrections to that data. More than half responded “No” to both questions.
  11. More than half of the companies have a process consumers can use to contest adverse decisions, but less than half keep a log of contested claims.

### CONCLUSION/NEXT STEPS

As requested by the SME group, the NAIC’s technical team completed an analysis of the data submitted in the Life AI/ML Survey. Insight was gained around the general use of AI/ML by insurance companies, uses of AI/ML in insurance company operations, data elements and sources used in insurance company operations, governance frameworks and documentation, consumer data recourse, and third-party sources for AI/ML models and/or data.

The insight gained from the survey will be used to supplement regulators’ knowledge of the current regulatory framework around AI/ML, governance, consumers, and third parties and to evaluate whether any changes should be made to the regulatory frameworks.

The SME group, other regulators, and NAIC staff have identified some potential next steps, including many activities already in progress. The following list of next steps is not intended to be complete, but it may be helpful as a starting point for discussions and decision-making about what next steps to take at the NAIC:

- Evaluate the survey analysis and determine whether to further explore the following subjects:
  - Company AI/ML model usage and the level of decision-making (i.e., the amount of human involvement in decision-making).
  - Company data elements.
  - Companies’ governance frameworks and the documentation of such.
  - Consumer data recourse.
  - Third-party regulatory framework.
- Create a risk hierarchy to prioritize the need for more model governance and company oversight. The general concept is that more oversight of a model will be needed as the consumer risk or impact increases from the modeling or models.
- Evaluate consumer data recourse. Companies report a wide variety of methods for consumers to evaluate and correct data used by companies. Some methods are short and easy, such as using an app to correct data, and other methods are more time consuming and require personal contact with the agent or company. In some cases, consumers may not even know about their data being used, so consumer transparency is a priority. (*Privacy Protections (H) Working Group*)
- Evaluate the regulatory framework around the use of third-party models and third-party data. Evaluate the ability of companies and regulators to obtain needed information from third parties and for regulators to oversee this work either through the companies or third parties in some way. (*Workstream Two of the Big Data and Artificial Intelligence (H) Working Group*)
- Evaluate concerns about third-party concentration by company use. (*Workstream Two of the Big Data and Artificial Intelligence (H) Working Group*)
- Determine whether additional best-practices white papers would be useful on subjects in the AI/ML space.

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### Appendix A: AI/ML Deployment

On each company operations tab (e.g., rating, underwriting) there is the following question: “If yes, what is the current level of AI/ML Deployment? (Select the highest level of deployment).” Two of the options for answers are “Proof of Concept (POC)” and “Prototype.” The difference between a Proof of Concept (POC) and a Prototype is discussed below.

- **Proof of Concept (POC):** A small exercise to test the design idea or assumption. The main purpose of developing a POC is to demonstrate the functionality and to verify a certain concept or theory that can be achieved in development.
- **Prototype:** Prototyping is a valuable exercise that allows the innovator to visualize how the product will function. A prototype is a working interactive model of the end-product that gives an idea of the design, navigation, and layout.
- **Difference between POC and Prototype:** While a POC shows that a product or feature can be developed, a prototype shows how it will be developed.

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### Appendix B: Level of Decisions Influenced by AI/ML

On each company operations tab (e.g., rating, underwriting), there is the following question: “Indicate the Level of Decisions Influenced by AI/ML (anticipated or already implemented).” The following are the potential answers to this question:

- **Automation:** Model requires no human intervention on execution.
- **Augmentation:** Model advises the human who makes a decision. The model suggests an answer.
- **Support:** Model provides information but does not suggest a decision or action.

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## Appendix C: AI/ML Model Category Types

For each of the AI/ML operational areas, there is a question asking the respondent to select whether a listed model is AI or a specific type of ML. If the model employs more than one type, mark all types that apply for the named model.

When selecting an appropriate category(ies) to describe a model, use the taxonomy provided below to determine which category(ies) applies. If the method being used is not specifically listed in the taxonomy, use expert judgment to select the best category(ies). If no category applies, enter your method in the “Other” column. You may select more than one method.

### 1. DL – Deep Learning

- Deep Boltzmann Machine (DBM)
- Deep Belief Network (DBN)
- Convolutional Neural Network (CNN)
- Stacked Auto-Encoder

### 2. ENS – Ensemble

- Random Forest
- Gradient Boosting Machine (GBM)
- Bootstrapped Aggregation (Bagging)
- AdaBoost
- Stacked Generalization (Blending)
- Gradient Boosted Regression Trees

### 3. NN – Neural Network

- Radial Basis Function Network (RBFN)
- Perceptron
- Back-propagation
- Hopfield Network

### 4. REG – Regularization

- Ridge Regression
- Least Absolute Shrinkage and Selection Operator (LASSO)
- Elastic Net
- Least Angle Regression (LARS)

### 5. RS – Rule System

- Cubist
- One Rule (OneR)
- Zero Rule (ZeroR)
- Repeated Incremental Pruning to Produce Error Reduction (RIPPER)

### 6. RGS – Regression (Note: Only applies if used in conjunction with a method defined as “AI/ML” for purposes of this survey.)

- Linear Regression
- Ordinary Least Squares Regression (OLSR)
- Stepwise Regression
- Multivariate Adaptive Regression Splines (MARS)
- Locally Estimated Scatterplot Smoothing (LOESS) Logistic Regression

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### 7. BAY – Bayesian Methods

- Naïve Bayes
- Averaged One-Dependence Estimators (AODE)
- Bayesian Belief Network (BBN)
- Gaussian Naïve Bayes
- Multinomial Naïve Bayes
- Bayesian Network (BN)

### 8. DT – Decision Trees

- Classification and Regression Tree (CART)
- Iterative Dichotomizer (ID3)
- C4.5
- C5.0
- Chi-square Automatic Interaction Detection (CHAID)
- Decision Stump
- Conditional Decision Trees
- M5

### 9. DR – Dimensionality Reduction

- Principal Component Analysis (PCA)
- Partial Least Square Regression (PLSR)
- Sammon Mapping
- Multidimensional Scaling (MDS)
- Project Pursuit
- Principal Component Regression (PCR)
- Partial Least Squares Discriminant Analysis
- Mixture Discriminant Analysis (MDA)
- Quadratic Discriminant Analysis (QDA)
- Regularized Discriminant Analysis (RDA)
- Flexible Discriminate Analysis (FDA)
- Linear Discriminant Analysis (LDA)

### 10. IB – Instance-Based

- k-Nearest Neighbor (KNN)
- Learning Vector Quantization (LVQ)
- Self-Organizing Map (SOM)
- Locally Weighted Learning (LWL)

### 11. CLU – Clustering

- k-Means
- k-Medians
- Expectation Maximization
- Hierarchical Clustering

### 12. AI – AI that is not categorized as ML

### 13. Any Other that meets the definition of AI/ML selected for this survey.

**Note:** Please make sure that any model supplied by an external vendor is also appropriately identified as one or more of the above model category types.

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### APPENDIX D: Definitions Specific to Pricing & Underwriting

The following are the definitions specific to underwriting:

- **Setting Assumptions:** Used to understand the deviation of actual experience from current assumptions and to understand mortality when no prior knowledge exists.
- **Reduced Time to Issue:** Used to verify application and claims data and speed approval processes. Speed up the delivery of policy pricing rates online.
- **Specialty Products for Certain Conditions, Such as Diabetes:** Studying and tracking behaviors that coincide with improved outcomes on certain diseases.
- **Automated Approval:** Approving an application without human intervention on that particular application.
- **Automated Denial:** Denying an application without human intervention on that particular application.
- **Input Into Non-Automated Approval Decision:** Providing data, analysis, or recommendations regarding a decision to approve an application in a situation where a human decision-maker still has the ability and responsibility to affirmatively consider this information and make a decision independently of the AI system. In this situation, the AI system cannot automatically approve the application, and protocols exist that ensure that each recommendation from the AI system is actively reviewed and not adopted by default.
- **Input Into Non-Automated Denial Decision:** Providing data, analysis, or recommendations regarding a decision to deny an application in a situation where a human decision-maker still has the ability and responsibility to affirmatively consider this information and make a decision independently of the AI system. In this situation, the AI system cannot automatically deny the application, and protocols exist that ensure that each recommendation from the AI system is actively reviewed and not adopted by default.
- **Underwriting Risk Class** Decisions regarding the criteria to use to establish specific named or numbered categories (risk class) that use combinations of attributes that affect an insurer's underwriting decision.

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### APPENDIX E: Definitions Specific to Marketing

The following are the definitions specific to Marketing:

- **Targeted Online Advertising:** Determination of which individuals on the internet should receive or see advertisements from the insurer.
- **Identification of Recipients of Mail or Phone Advertising:** Determination of which individuals would be desirable recipients of an insurer's advertisements via the telephone or physical mail.
- **Provision of Offers to Existing Customers:** Determination of which customers should be notified of new insurance products, discounts, options to be written in a different book of business, or any other benefit or favorable treatment that the insurer seeks to extend.
- **Identification of Potential Customer Groups:** Determination regarding which consumer sub-populations could likely become additional customers of the insurer and/or benefit from the insurer's products and services.
- **Demand Modeling:** Identification of consumers' needs for and interest in specific types of insurance and insurance products that the insurer is offering or whose development or sale the insurer may be considering or exploring.
- **Direct Online Sales:** Selling insurance policies to consumers through a direct internet-based channel in a manner that does not rely solely on preprogrammed decision rules.



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### APPENDIX F: Definitions Specific to Risk Management

The following are the definitions specific to loss prevention:

- **Wearable Devices:** Wearable devices refer to smart electronic devices with sensors that collect and deliver biometric information. The technology includes devices that are worn on the wrist and other forms such as jewelry, glasses, clothing, shoes, and implanted devices. The main category of wearables in the market are fitness trackers and smartwatches, which gather metrics associated with physical activity: step count, activity minutes, distance traveled, floors climbed, calories burned, heart rate, and sleep patterns.
- **Wellness Initiatives:** A program intended to improve and promote health and fitness that's usually offered through the workplace, although insurance plans can offer them directly to their enrollees. The program allows employers or plans to offer premium discounts, cash rewards, gym memberships, and other incentives to participate. Some examples of wellness programs include smoking cessation, diabetes management programs, weight loss programs, and preventative health screenings.
- **Discount Medical Programs:** Programs that provide a discount on medical services or prescription drugs.
- **Technology to Detect Smoking:** Wearable sensor technology used to detect and help people quit smoking.
- **Technology for Disease Detection:** AI and ML programs designed to diagnose disease using training data— such as the patient's history, lab results, scans, symptoms, and images of confirmed and susceptible cases—or real-time facial recognition images.

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### APPENDIX G: Data Use Table ("Data Elements") Definitions

The data elements are located at the bottom of each of the company operations' (rating, underwriting, etc.) pages.

1. **Credit Based Insurance Score:**
2. **Financial Score:**
3. **Other Type of Non-Credit "Score":** A numeric value generated based on a combination of any underlying attributes or behaviors of the consumer, insured risk, or any items considered by the insurer to be relevant to the consumer or insured risk. Scores are computed using deterministic algorithms or models which are not themselves considered to be AI / ML systems. Inquiries in this survey regarding such scores seek to understand whether these scores are used as input data elements within AI / ML systems.
4. **Demographic Data**
5. **Telematics**
6. **Driving Behavior**
7. **Biometrics**
8. **Medical:** Medical history, medical condition, prescription data, lab data
9. **Online Media:** Web searches, online purchases, social media activities
10. **Other: Non-Traditional Data Elements**

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### APPENDIX H: Model Governance Definitions

The purpose of the questions related to model governance is to obtain a better understanding of a company's awareness of specific risk areas tied to the NAIC Artificial Intelligence Principles. In addition, the survey seeks information to understand if guidelines and/or best practices are documented. Specifically, if the company is involved in using AI/ML models, **does the company have a documented process in place** that addresses:

- **Fairness and Ethics Considerations:** Ensuring responsible adherence to fairness and ethical considerations. It is clear there is debate regarding the definition of "fairness and ethics," so for the purposes of this survey, and assuming a general understanding of the terms, the response should be consistent with how the company defines those terms. Common principles that fall under this category include Transparency, Justice and Fairness, Non-Maleficence, and Responsibility and Privacy. Generally, respect the rule of law and implement trustworthy solutions designed to benefit consumers in a manner that avoids harmful or unintended consequences including unfair or proxy discrimination.
- **Accountability for Data Algorithms' Compliance with Laws as well as Intended and Unintended Impacts:** Ensuring the data used and the algorithms/models within the scope of the AI/ML system are delivering the intended benefit, and there are proactive processes in place to ensure there is no unacceptable unintended impact. Simply put, be responsible for the creation, implementation, and impacts of any AI system.
- **Appropriate Resources and Knowledge Involved to Ensure Compliance with Laws Including those Related to Unfair Discrimination.**
- **Ensure Transparency with Appropriate Disclosures Including Notice to Consumers Specific to Data Being Used and Methods for Appeal and Recourse Related to Inaccurate Data:** Ensuring documented processes and best practices are in place that govern and actively address the issue of transparency, ensuring adequate and complete/understandable consumer disclosure regarding the data being used and how the data are used, as well as providing a way for consumers to appeal or correct inaccurate data. This is intended to be specific for data not already protected by legislation such as the Fair Credit Reporting Act (FCRA), as the assumption is all companies would be compliant with that law. This pertains to consumer data NOT specified in the FCRA.
- **AI Systems are Secure, Safe, and Robust including Decision Traceability and Security and Privacy Risk Protections:** Ensuring an appropriate governance process is in place and documented specific to the company's AI/ML activity or program that focuses on protecting security, in terms of its data and intellectual property, from potentially compromising interference or risk and relevant and necessary privacy protections are in place; and ensuring the data and the AI/ML models are Ensuring the requisite and appropriate resources, skillsets and knowledge needed to ensure compliance with laws, including those related to unfair discrimination, are actively involved in these programs and decision-making – including oversight of third parties understanding and competence related to compliance with relevant laws and the issue of unfair discrimination. Sufficiently transparent and explainable so that they can be reviewed for compliance with laws and best practices and proven to not be unfairly discriminatory or used for an unethical purpose.

It is understood that governance models vary in terms of components and terms used to describe these risk areas. However, there is a common thread across most governance models, and this language was specifically used in this survey as it ties directly to the NAIC's adopted AI Principles. Where there may be concerns about overlap, the intention is for this additional information to clarify the unique intent of each. The company should reply to each component as specifically as possible.

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Governance, for the purpose of this survey, includes both controls within the data science group as well as controls at the higher level of Enterprise Risk Management (ERM). Governance should include situations where 3rd parties are used (e.g., audits).

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### APPENDIX I: Written Responses to Governance Questions

The governance section of the survey asked companies to address the following areas of AI model governance:

- A. Accountability for Data Algorithms' Compliance with Laws.
- B. Accountability for Data Algorithms' Intended Impacts
- C. Accountability for Data Algorithms' Unintended Impacts
- D. Appropriate Resources and Knowledge Involved to Ensure Compliance with Laws Including those Related to Unfair Discrimination
- E. Ensure Transparency with Appropriate Disclosures Including Notice to Consumers Specific to Data Being Used and Methods for Appeal and Recourse Related to Inaccurate Data
- F. AI Systems are Secure, Safe and Robust including Decision Traceability and Security and Privacy Risk Protections
- G. Processes for Providing Consumers with Data Elements Used in Consumer Impact Models  
Consumer Data Disclosures
- H. Practices for Ensuring Compliance with Regulatory Frameworks in the Application of Non-FCRA Data
- I. Processes for making consumers aware of non-FCRA data collection, when used & how used
- J. The extent to which human intelligence influences the decision making based on the AI/ML results? How much human intervention is involved?

Companies were asked to provide written responses to specific questions in the above areas. The following is a summary of the unique company responses to the questions posed in each of the operational areas of (1) pricing and underwriting, (2) marketing, and (3) risk management. Company names have been omitted from the responses. Where a company name was indicated, the notation “[Company]” was inserted.

One thing to note is that many companies used the same phrase to respond to many questions they apparently felt were similar.

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### A. Accountability for Data Algorithm's Compliance with the Law

The companies were asked to respond to the following question with respect to (1) pricing and underwriting, (1) marketing, and (3) risk management:

- “Briefly describe your practices with respect to Accountability for Data Algorithms' Compliance with Laws.”

The responses by operational area are provided below.

#### Pricing & Underwriting

- AI Steering Committee
- All models are subject to our Model Governance program, which includes policies, procedures and standards designed to comply with applicable legal requirements. Models are subject to legal review in accordance with our Model Governance program.
- Automated underwriting programs are reviewed by Legal and Compliance to ensure compliance with laws and regulations.
- Business users work together with the [Company] legal department to ensure our processes, data sources, algorithms, and models are compliant with new or evolving laws and regulations. Compliance, Risk, and IT are consulted, as necessary. In preparation for AI/ML use cases emerging in the future, [Company] is enhancing its processes to ensure early identification of AI model usage across the Company.
- [Company] facilitates mandatory training, as needed, to educate employees on compliance topics and has a system for review, analysis, and disbursement of new laws.
- Legal and Compliance review/engagement is included in the Model Development process capture in the corresponding procedures.
- For AI models used in pricing and underwriting, lawyers and compliance professionals review relevant documentation and confer with business stakeholders and subject matter experts within the company's data science and AI governance areas to ensure compliance with applicable laws and conformity with the company's principles of fairness, accountability, and transparency. Legal, compliance and control partner's express approvals are required at multiple stages of an AI model's lifecycle, including development, piloting, deployment and with post-deployment material changes. Additionally, there are controls in the business processes, such as the adverse action notices, which allow for ongoing evaluation of the AI model once it is implemented, and a process exists to monitor for new laws and regulations that have applicability to the AI model.
- [Company] has implemented an AI governance and risk management framework which includes a cross functional working group of representatives from law, risk, model governance, business, and data analytics. The group reviews all AI models for compliance with [Company's] AI principles and with relevant regulations and laws. Additionally, all AI / ML models are subject to validation testing and continuous monitoring.
- [Company] has implemented an AI governance and risk management framework which includes a cross functional working group of representatives from law, risk, model governance, business, and data analytics. The group reviews all AI models for compliance with [Company's] AI

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principles and with relevant regulations and laws. Additionally, all AI / ML models are subject to validation testing and continuous monitoring.

- Legal and regulatory requirements involving AI are documented and managed in a manner such that employees designing and/or deploying AI systems are aware of and understand the applicable requirements. Our AI governance program is supported by a cross-functional Committee, including representatives from legal and compliance, that reviews our model inventory and ensures compliance with applicable laws and regulations. Our program also leverages existing privacy and data security policies and guidelines, and our AI Governance Committee includes representatives from these areas to provide leadership, direction, and oversight of AI design and deployment. Furthermore, we have adopted a model risk management framework that contains requirements for documentation, including assumption documentation prescribed by applicable laws and regulations.
- Legal is consulted on algorithms created for underwriting purposes and a review is done for compliance with laws and regulations. We are working to implement a formalized governance structure as we expand our use of AI/ML for Underwriting purposes.
- Legal, Compliance, Office of Analytics, and Risk Management work in close collaboration with business partners to ensure compliance with laws. Processes include formal review and testing of model results.
- [Company] ensures its models comply with applicable laws related to pricing and underwriting by monitoring changes in the law relating to underwriting, working with outside counsel, and staying
- Pricing and underwriting models are subject to model risk management governance, which includes modeling standards for advanced analytics/ML models. Additionally, all models are expected to comply with enterprise-wide Code of Ethics.
- [Company] recognizes that as a designer and user of AI systems, it has a responsibility to ensure, inter alia, that its models operate in compliance with all applicable laws and regulations. [Company's] global legal, compliance, ethics, model risk and operational risk management programs provide the accountability frameworks with which the company ensures that its models comply with applicable laws, [Company's] Ethical Principles of AI and [Company's] Code of Conduct. This includes conducting legal reviews, as well as risk-based assessments as needed by the privacy and risk management functions, examining the nature of the data elements used, the potential impact (intended or otherwise) of the model, the proposed model's risk profile, compliance with legal and regulatory requirements as well as [Company's] own policies, standards, and procedures.
- [Company] complies with applicable insurance laws. [Company] is monitoring changes in the law relating to underwriting and staying abreast of the latest developments in this space.
- The Company is committed to establishing and maintaining a governance framework that helps to ensure that its use of Artificial Intelligence, Machine Learning, and future, similar technologies is compliant with all applicable laws and regulations, including those specifically applicable to pricing and underwriting. Our approach to governance is risk based and balances the importance of thoughtful and responsible use of evolving technology in life insurance pricing and underwriting with the goal of meeting broad consumer demand for life insurance and to make the process less invasive and more efficient for the proposed insured. Accountability for compliance with applicable laws and regulations is component of our governance framework,

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which is based on the NAIC AI Principles which serve as guideposts to help ensure that such technologies are Fair and Ethical, Accountable, Compliant, Transparent, Safe, Secure, and Robust. Our governance program was designed, and will continue to evolve, based upon these foundational principles and the controls that we believe are important to achieving such a program. Such controls include, among other things, multidisciplinary program development and review, including by control functions; ongoing oversight by control functions and by leadership; clarity around data inputs and robust discussion and review of such inputs prior to implementation, outcomes testing, and ongoing evaluation and reporting.

- The company is working on high level AI principles that draw heavily from the NAIC's principles for AI and are informed by the NIST risk management framework, the White House blueprint for an AI bill of rights and Microsoft's responsible AI principles. The company anticipates forming a cross-functional AI governance team that will develop, implement, and oversee an AI risk management framework.
- The Company's practices with respect to accountability for data algorithms compliance with laws in underwriting began in the developmental stages of our models, with the inclusion and participation of legal counsel in the development process. Then, through the Company's legislative monitoring process, applicable bills and proposed regulations regarding unfair discrimination and underwriting are routed to the appropriate personnel to review for any necessary changes to current processes or models. In addition, our underwriting methods and model outputs are reviewed by operations and actuarial personnel on a regular basis, to help ensure that the underwriting determinations are consistent with our expectations and not unfairly discriminatory with regard to particular groups.
- The Company's practices with respect to accountability for data algorithms compliance with laws in underwriting begin in the developmental stages of our models, with the inclusion and participation of legal counsel in the development process. Then, through the Company's legislative monitoring process, applicable bills and proposed regulations regarding unfair discrimination and underwriting are routed to the appropriate personnel to review for any necessary changes to any processes or models during development or once implemented. In addition, after implementation, our underwriting methods and model outputs will be reviewed by operations and actuarial personnel on a regular basis, to help ensure that the underwriting determinations are consistent with our expectations and not unfairly discriminatory with regard to particular groups.
- The following processes are utilized in reviews of AI models as appropriate to ensure compliance with applicable laws: A cross-functional AI governance committee conducts an initial review of any proposed use of an AI model. The committee considers the AI model use case including whether an AI solution is appropriate and whether the AI model comports with the AI principles, and it includes product-line and privacy attorneys, compliance and risk representatives, data scientists, and technical subject matter experts. An evaluation of the AI model technical implementation is conducted at up to three separate points to ensure appropriate security controls are in place and technology standards are followed. During the procurement process, contract terms are reviewed to ensure they are appropriate for any third party's AI model such as the need for provisions like the data protection addendum. An architectural review is conducted of AI models that involve new applications and architecturally significant changes to applications. The review ensures technology solutions align with the future state architecture,



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principles, and directives. Solutions are also compared against the existing application inventory to evaluate potential redundancy for the capabilities provided. Privacy attorneys and compliance representatives also conduct privacy impact assessments on sensitive data uses, including those that involve AI models, to ensure the use cases are in compliance with legal and internal policy requirements. An information risk consultation assessment is conducted whenever there are changes in people, processes, or technology of solutions. The assessment evaluates the information risks introduced by the changes by evaluating the effects against the information protection framework. An AI explainability and interpretability review provides a final review of the AI model's use case, scope, and development prior to its deployment. The AI model's training data, consumed data, and outputs are reviewed against principles, policies, and best practices. Due diligence is conducted regarding any new relationship with a third-party providing goods or services. The assessment evaluates risk introduced by the relationship based on the services or goods, inherent risk, and data involved versus the third party's controls. All of these processes involve the business owners implementing the AI model throughout the reviews including the information gathering, feedback, and approval phases. Beyond the business owners, subject matter experts are engaged as necessary to provide additional information about AI models and the implementation."

- The company's Model Risk Management practice, within Enterprise Risk Management, validates critical and important models across the company. Where appropriate, validations include steps that seek to confirm the appropriate engagement between Model Developers and Legal. In addition, Law and Compliance collaborate to assess new or rebuilt data models that primarily use third party data in order to ensure that reasonable compliance controls are in place.
- The parties involved in model development (e.g., model developers, business owners) regularly consult with the First Line Model Governance, Legal, and Compliance functions to ensure compliance with all applicable laws. We also consult with outside counsel when needed, and through the assistance of our Office of Governmental Affairs team, we monitor the latest developments in the law.
- The underwriting and pricing functions work closely with our Legal and Compliance teams to ensure that all relevant tools (including AI/ML models) comply with applicable laws and regulations. These groups also monitor potential changes to laws and regulations to ensure this compliance persists.
- Using only traditional underwriting information to build our models, in line with current underwriting guideline requirements.
- Using only traditional underwriting information to build our models, in line with current underwriting guidelines
- We developed an AI/ML advisory group, backed by a formal policy for AI/ML use and approval. This group has legal, compliance, InfoSec, IT, EA, and Data Analytics representation.
- We follow our AI/ML Governance Policy which includes a review of compliance with anti-discrimination, privacy, and insurance laws.
- We have a couple of standing meetings, including the AI @ [Company] monthly meeting, where data science and actuarial teams convene with internal stakeholders knowledgeable on insurance laws and regulations. These practices ensure that we remain compliant with regard to the changing regulatory landscape.

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- We comply with current rules related to pricing and underwriting as applicable to our business. Our Data Policy requires ethical reviews of all AI/ML which are based primarily on the NAIC AI Principles.

### Marketing

- AI is used to support human decision-making but no decisions are made by AI. In making decisions supported by AI, employees follow the company's compliance guidelines and applicable laws.
- AI Steering Committee
- All models are subject to our Model Governance program, which includes policies, procedures and standards designed to comply with applicable legal requirements. Models are subject to legal review in accordance with our Model Governance program.
- Business users work together with the [company] legal department to ensure our processes, data sources, algorithms, and models are compliant with new or evolving laws and regulations. Compliance, Risk, and IT are consulted, as necessary. In preparation for AI/ML use cases emerging in the future, [Company] is enhancing its processes to ensure early identification of AI model usage across the Company.
- Compliance consultation is part of our Model Risk Management Process, including completing a Privacy Impact Assessment.
- Legal and Compliance review/engagement is included in the Model Development process capture in the corresponding procedures.
- For AI models used in marketing, lawyers and compliance professionals review relevant documentation and confer with business stakeholders and subject matter experts within the company's data science and AI governance areas to ensure compliance with applicable laws and conformity with the company's principles of fairness, accountability, and transparency. Legal, compliance and control partner's express approval are required at multiple stages of an AI model's lifecycle, including development, piloting, deployment and with post-deployment material changes. Additionally, there are controls in the business processes that allow for ongoing evaluation of the AI model once it is implemented and a process exists to monitor for new laws and regulations that have applicability to the AI model.
- [Company] has implemented an AI governance and risk management framework which includes a cross functional working group of representatives from law, risk, model governance, business, and data analytics. The group reviews all AI models for compliance with [Company's] AI principles and with relevant regulations and laws. Additionally, all AI / ML models are subject to validation testing and continuous monitoring.
- [Company] ensures its models comply with applicable laws by monitoring changes in the law, working with counsel, and staying abreast of the latest developments in this space.
- Legal is consulted on algorithms created for Marketing purposes and a review is done for compliance with laws and regulations. We are working to implement a formalized governance structure as we expand our use of AI/ML for Marketing purposes.
- Legal, Compliance, Office of Analytics, and Risk Management work in close collaboration with business partners to ensure compliance with laws. Processes include formal review and testing of model results.

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- [Company] recognizes that as a designer and user of AI systems, it has a responsibility to ensure, inter alia, that its models operate in compliance with all applicable laws and regulations. [Company's] global legal, compliance, ethics, model risk and operational risk management programs provide the accountability frameworks with which the company ensures that its models comply with applicable laws, [Company's] Ethical Principles of AI and [Company's] Code of Conduct. This includes conducting legal reviews, as well as risk-based assessments as needed by the privacy and risk management functions, examining the nature of the data elements used, the potential impact (intended or otherwise) of the model, the proposed model's risk profile, compliance with legal and regulatory requirements as well as [Company's] own policies, standards, and procedures.
- The Company is committed to establishing and maintaining a governance framework that helps to ensure that its use of Artificial Intelligence, Machine Learning, and future, similar technologies is compliant with all applicable laws and regulations. The Company's evolving governance framework for use of Artificial Intelligence, Machine Learning, and future, similar technologies include a process whereby proposed new agreements for third-party provided technologies, including those used in marketing, are required to undergo a review by control functions for compliance with applicable laws and regulations. Third party agreements each have a designated contract owner, and the contract owner is responsible for monitoring the third party's compliance with the terms of the agreement, which includes applicable legal and regulatory requirements.
- The following processes are utilized in reviews of AI models as appropriate to ensure compliance with applicable laws: A cross-functional AI governance committee conducts an initial review of any proposed use of an AI model. The committee considers the AI model use case including whether an AI solution is appropriate and whether the AI model comports with the AI principles, and it includes product-line and privacy attorneys, compliance and risk representatives, data scientists, and technical subject matter experts. An evaluation of the AI model technical implementation is conducted at up to three separate points to ensure appropriate security controls are in place and technology standards are followed. During the procurement process, contract terms are reviewed to ensure they are appropriate for any third party's AI model such as the need for provisions like the data protection addendum. An architectural review is conducted of AI models that involve new applications and architecturally significant changes to applications. The review ensures technology solutions align with the future state architecture, principles, and directives. Solutions are also compared against the existing application inventory to evaluate potential redundancy for the capabilities provided. Privacy attorneys and compliance representatives also conduct privacy impact assessments on sensitive data uses, including those that involve AI models, to ensure the use cases are in compliance with legal and internal policy requirements an information risk consultation assessment is conducted whenever there are changes in people, processes, or technology of solutions. The assessment evaluates the information risks introduced by the changes by evaluating the effects against the information protection framework. An AI explainability and interpretability review provides a final review of the AI model's use case, scope, and development prior to its deployment. The AI model's training data, consumed data, and outputs are reviewed against principles, policies, and best practices. Due diligence is conducted regarding any new relationship with a third-party providing goods or services. The assessment evaluates risk introduced by the relationship based on the services or

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goods, inherent risk, and data involved versus the third party's controls. All of these processes involve the business owners implementing the AI model throughout the reviews including the information gathering, feedback, and approval phases. Beyond the business owners, subject matter experts are engaged as necessary to provide additional information about AI models and the implementation."

- The [Company's] Model Risk Management practice, within Enterprise Risk Management, validates critical and important models across the company. Where appropriate, validations include steps that seek to confirm the appropriate engagement between Model Developers and Legal. In addition, Law and Compliance collaborate to assess new or rebuilt data models that primarily use third party data in order to ensure that reasonable compliance controls are in place.
- The parties involved in model development (e.g., model developers, business owners) regularly consult with the First Line Model Governance, Legal, and Compliance functions to ensure compliance with all applicable laws. We also consult with outside counsel when needed, and through the assistance of our Office of Governmental Affairs team, we monitor the latest developments in the law.
- We adhere to the ToS of large third-party marketing platforms (Ex: Google Ads/Facebook Ads) in terms of accountability for the data algorithms compliance with laws in marketing.
- We developed an AI/ML advisory group, backed by a formal policy for AI/ML use and approval. This group has legal, compliance, InfoSec, IT, EA, and Data Analytics representation.
- We have a couple of standing meetings, including the AI @ the company monthly meeting, where data science and actuarial teams convene with internal stakeholders knowledgeable on insurance laws and regulations. These practices ensure that we remain compliant with regard to the changing regulatory landscape.
- We may be dependent on LinkedIn if we pursue this target marketing use case with producers.
- We work closely with our Legal and Compliance teams to ensure that all relevant tools (including AI/ML models) comply with applicable laws and regulations. These groups also monitor potential changes to laws and regulations to ensure this compliance persists.
- We've answered yes to the question above because we use data in marketing (as do all insurers). The use of this data is governed pursuant to normal advertising and marketing standards.
- While we haven't adopted practices with respect to Accountability for Data Algorithms compliance with laws specifically for marketing, we do track regulations specific to AI/ML and they are implemented within appropriate business areas of the company. Additionally, we comply with current rules related to marketing as applicable to our business. Our Data Policy requires ethical reviews of all AI/ML which are based primarily on the NAIC AI Principles.

### Risk Management

- AI Steering Committee
- All models are subject to our Model Governance program, which includes policies, procedures and standards designed to comply with applicable legal requirements.
- Models are subject to legal review in accordance with our Model Governance program.
- Legal and Compliance review/engagement is included in the Model Development process capture in the corresponding procedures.
-

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- Legal, Compliance, Office of Analytics, and Risk Management work in close collaboration with business partners to ensure compliance with laws. Processes include formal review and testing of model results.
- [Company] does not currently have any use cases for artificial intelligence or machine learning in Risk Management. In a scenario where a use case is being considered, legal review for compliance with laws including those relating to Data Algorithms” would apply for any actual or contemplated use in the operational areas listed across organization functions and lines of business.
- Compliance, Risk, and IT are in addition consulted, as necessary. In preparation for AI/ML use cases emerging in the future, [Company] is enhancing its processes to ensure early identification of AI model usage across the Company.
- Our Legal and Compliance teams would review and sign-off on the compliance status of any future models implemented in the Risk Management space. Our Legal and Compliance teams monitor applicable state and federal laws to understand how to remain compliant in these areas.
- The company recognizes that as a designer and user of AI systems, it has a responsibility to ensure, inter alia, that its models operate in compliance with all applicable laws and regulations.
- [Company]’s global legal, compliance, ethics, model risk and operational risk management programs provide the accountability frameworks with which the company ensures that its models comply with applicable laws, [Company’s] Ethical Principles of AI and [Company’s] Code of Conduct. This includes conducting legal reviews, as well as risk-based assessments as needed by the privacy and risk management functions, examining the nature of the data elements used, the potential impact (intended or otherwise) of the model, the proposed model’s risk profile, compliance with legal and regulatory requirements as well as [Company’s] own policies, standards, and procedures.
- The parties involved in model development (e.g., model developers, business owners) regularly consult with the [Company] Model Governance, Legal, and Compliance functions to ensure compliance with all applicable laws. We also consult with outside counsel when needed, and through the assistance of our Office of Governmental Affairs team, we monitor the latest developments in the law.
- Using only traditional underwriting information to build our models, in line with current underwriting guideline requirements.
- We developed an AI/ML advisory group, backed by a formal policy for AI/ML use and approval. This group has legal, compliance, InfoSec, IT, EA, and Data Analytics representation.
- We have a couple of standing meetings, including the AI @ [Company] monthly meeting, where data science and actuarial teams convene with internal stakeholders knowledgeable on insurance laws and regulations. These practices ensure that we remain compliant with regard to the changing regulatory landscape.
- We've adopted best practices with a governance and risk management framework surrounding all AI governance.
- While we haven't adopted practices with respect to Accountability for Data Algorithms compliance with laws specifically for risk management, we do track regulations specific to AI/ML and they are implemented within appropriate business areas of the company. Additionally, we comply with current rules related to risk management as applicable to our business. Our Data Policy requires ethical reviews of all AI/ML which are based primarily on the NAIC AI Principles.

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### B. Accountability for Data Algorithms' Intended Impacts

The companies were asked to respond to the following question with respect to (1) pricing and underwriting, (2) marketing, and (3) risk management:

- “Briefly describe your practices with respect to Accountability for Data Algorithms' Intended Impacts.”

The responses by operational area are provided below.

#### Pricing & Underwriting

- [Company] has robust policies and procedures in place that are grounded within NAIC's broader data governance, risk governance, and model governance practices to carefully consider any external data sources, data elements, models, or algorithms before they are used in an insurance practice. The company carefully considers how, why, and where data or a model will be used. These policies and procedures help to ensure accountability for the data or model's intended and unintended impacts. Descriptions of these practices are outlined below.
  - Data Governance: Data is collected and used in accordance with the company's data ethics principles, which state that data collection, use, and access be fair and ethical, accountable, compliant, transparent, and secure/safe/robust. The company also has systems and platforms in place for data collection, tracking, storage, and governance that allow the company to govern what is brought in, who can access it, and how it can be used.
  - General Risk Governance: There are several risk intake processes in place that assist the company in identifying what additional review and evaluation may be needed. In these processes, information is collected that identifies the type of data involved, how it is being used, the source of the data, business purpose for the data, etc., as well as any algorithms or predictive models that may be involved. These same processes are employed for algorithms or predictive models built at (company) and those purchased from a third party. For instance, with any new technology, a risk assessment process facilitates reviews by Compliance, Privacy, Records Management, Data Governance, Law, and Information Risk & Cybersecurity. If a model or algorithm is being developed and put into production, the company's model governance framework is considered and deployed where applicable.
  - With regard to underwriting, additional controls are in place to ensure data used in underwriting is relevant and related to the risk being insured against. This is true for new data that may be relevant to mortality or morbidity (depending on the product line) but also with historical data as the medical field continues to advance. The company has a team of medical professionals who continually study and assess all underwriting inputs to ensure the company is accurately assessing risk.
  - Model Governance: [Company] has a long-standing model risk management framework designed to effectively identify, measure, and manage model risks for internally and externally developed models. The framework has continued to evolve to be consistent



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with the nature, scale, complexity, and risk of models used within the company. (Company) maintains a model governance policy that addresses primary elements related to managing model risk including identification of models, assessing level of governance required based on materiality and impact of inherent risk; establishing roles and responsibilities associated with managing models and model risk; and defining control procedures and techniques for the development, maintenance and use of models, including model validation, review and documentation. Roles established in the policy include model developers, users, reviewers, and owners.

- As related to this survey, the model user takes on primary responsibilities including: providing subject matter expertise in the development of the model; identifying potentially significant data sets and sources; ensuring that there is an appropriate evaluation (with a satisfactory conclusion) of whether the data and its use meets applicable legal and other company requirements (data governance, privacy, security, etc.), including sensitive factor review, any applicable bias testing, and the company's ethical standards; ensuring an appropriate degree and form of explainability (e.g. using SHAP values displayed by the model monitoring framework to provide an understandable statement of how the model's predictions are generated from inputs and the operation of the model) and interpretability (i.e. ability to interpret how the results of the model should be understood in the context of the model's designed functional purpose) given the nature of the model use; assessing model results to ensure spurious correlations are not driving outcomes; and communicating business constraints to the model developer so they are appropriately reflected in the techniques used to develop the model. The model user is also responsible for monitoring the model when used in the production environment; establishing thresholds to identify when the model is no longer performing at the appropriate level; identifying when model results are no longer valid; and for establishing processes to remediate issues identified.
- All of these processes are designed to ensure that data, data elements, models and algorithms are used appropriately and responsibly, in line with the given business use case, accounting for both intended and unintended impacts."
- As previously described, our practices were designed keeping NAIC AI Principles in mind. The controls we have established to ensure Intended Impacts include conducting ongoing oversight and monitoring from both a controls function and leadership perspective to ensure that Data Algorithms in pricing and underwriting are operating as intended. In addition to these ongoing processes, performance testing of pricing and underwriting models is conducted prior to placing changes in production and results are reviewed by internal stakeholder governance groups.
- [Company] facilitates mandatory training, as needed, to educate employees on compliance topics and has a system for review, analysis, and disbursement of new laws.
- Expected outcomes from the algorithm/tool are quantified based on analysis of our empirical data. After implementation, the relevant distributions of actual outcomes are monitored and compared to these, so that meaningful deviations can be investigated.
- [Company] has implemented an AI governance and risk management framework which includes a cross functional working group of representatives from law, risk, model governance, business, and data analytics. The group reviews all AI models for compliance with [Company's] AI

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principles and with relevant regulations and laws. Additionally, all AI / ML models are subject to validation testing and continuous monitoring.

- [Company] has implemented an AI governance and risk management framework which includes a cross functional working group of representatives from law, risk, model governance, business, and data analytics. The group reviews all AI models for compliance with [Company's] AI principles and with relevant regulations and laws. Additionally, all AI / ML models are subject to validation testing and continuous monitoring.
- Legal and Compliance review/engagement is included in the Model Development process capture in the corresponding procedures.
- Legal, Compliance, Office of Analytics, and Risk Management work in close collaboration with business partners to ensure intended impacts are appropriate. Evaluation includes training and testing algorithms over credible data sets.
- [Company] utilizes a "Three Lines of Defense" model for risk management. In the first line of defense, actuaries and underwriting professionals review data to ensure actual results are consistent with underwriting standards and expected mortality. As a second line of defense, depending on risk level, our Model Risk Management team may independently validate the models for certain use cases. The effective execution of the Model Risk policy is regularly tested by internal audit as part of the third line of defense.
- [Company] products undergo an internal process of peer review and sign-off to ensure they are effective, thoroughly tested, and appropriate for their intended uses. All users of [Company] are responsible for accountability for the way in which they implement our products within their own processes
- Model accuracy and quality are monitored and audited. - Dashboards built to continuously monitor accuracy & drift of data inputs and model outputs. - Standard Quality Assurance practices are followed as needed. - Controls for toggling models and model hyperparameters. Furthermore, we have adopted a Model Risk Management (MRM) framework that outlines our approach to AI Model risks, including intended impacts. AI Model implementation requires application of standard Company IT DevOps practices and principles. Processes for applying expected IT Controls includes but is not limited to: - Version Control -Change Management - User Documentation - Evidence of Validation - Input and Output File Controls All Model Documentation that falls in scope for the Model Risk Management Framework should be centrally located in the form of a Model Inventory. Information to be included in this documentation includes but is not limited to: -Model Owner -Model Owner's Name [This word was not discernible] date - Intended purpose and uses - Version/Last Change date -Summary of Last Validation and Result - Core Modeling Decisions with evidence of Management Sign Off
- Model risk management modeling standards include guidance for bias/fairness testing and ongoing model performance monitoring.
- Models are cross validated during training. Deployed models are monitored for input/target shifts. KPIs are tracked.
- Models are reviewed for technical soundness, business outcomes, conceptual soundness using backtesting, simulation, and other techniques.
- Models are subject to: validations on test data, out of sample holdout data, user acceptance testing



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- Our [Company] Model Governance team performs model validation to evaluate and challenge models for conceptual soundness, data quality, model performance, appropriateness for intended usage, and other checks to make sure proper practices were followed. Our Second Line Model Risk Management team may also perform model validation for the most important, highest risk models.
- Our Model Risk Management Policy applies to all models, including AI/ML. This policy helps to ensure accountability for intended impacts. Model risk management is a shared responsibility of multiple stakeholders across the company. In line with the company's risk framework, the "three lines" [This word was not discernible] structure has been implemented to clearly delineate and assign responsibilities between model owners (1st line), risk (2nd line), and internal audit (3rd line). Furthermore, the Data Policy requires ethical reviews, which track to the NAIC AI Principles, to highlight risks and recommend appropriate controls as applicable.
- Our underwriting models are transparent. We can explain what happened in the model from input to output. In case of an adverse underwriting decision due to [Company] data, an applicant has the option to dispute the accuracy or completeness of any information contained in the report with [Company]. Audits of the automated decisions are conducted on a regular basis. We also conduct retro studies to compare manual (human) decisions with the model outcomes.
- Our vendors provide periodic reporting on their monitoring efforts in regard to quantitative testing. In turn, we review these reports as they are provided to understand impacts.
- [Company] recognizes that as a designer and user of AI systems, it has a responsibility to ensure, inter alia, that its models operate in compliance with all applicable laws and regulations. [Company's] global legal, compliance, ethics, model risk and operational risk management programs provide the accountability frameworks with which the company ensures that its models comply with applicable laws, [Company's] Ethical Principles of AI and [Company's] Code of Conduct. This includes conducting legal reviews, as well as risk-based assessments as needed by the privacy and risk management functions, examining the nature of the data elements used, the potential impact (intended or otherwise) of the model, the proposed model's risk profile, compliance with legal and regulatory requirements as well as [Company's] own policies, standards, and procedures.
- [Company] reviews actual outcomes relative to expectations so that appropriate adjustments can be made if needed.
- The Company's practices with respect to accountability for data algorithms Intended Impacts in underwriting include thorough testing throughout the development and implementation cycle to ensure that the model does what it is intended to do. Changes to the model and model inputs after implementation are tested to ensure that impacts from such changes are as intended.
- The following processes are utilized in reviews of AI models as appropriate to ensure intended impacts are explored and addressed:
  - A cross-functional AI governance committee conducts an initial review of any proposed use of an AI model. The committee considers the AI model use case including whether an AI solution is appropriate and whether the AI model comports with the AI principles, and it includes product-line and privacy attorneys, compliance and risk representatives, data scientists, and technical subject matter experts.

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- Privacy attorneys and compliance representatives also conduct privacy impact assessments on sensitive data uses, including those that involve AI models, to ensure the use cases are in compliance with legal and internal policy requirements.
- An information risk consultation assessment is conducted whenever there are changes in people, processes, or technology of solutions. The assessment evaluates the information risks introduced by the changes by evaluating the effects against the information protection framework.
- An AI explainability and interpretability review provides a final review of the AI model's use case, scope, and development prior to its deployment. The AI model's training data, consumed data, and outputs are reviewed against principles, policies, and best practices.

All of these processes involve the business owners implementing the AI model throughout the reviews including the information gathering, feedback, and approval phases. Beyond the business owners, subject matter experts are engaged as necessary to provide additional information about AI models and the implementation.

- [Company] utilizes a robust Model Risk Management (ModRM) framework to actively mitigate the potential adverse consequences from using models in making critical business decisions and reporting financial results. ModRM assures that sound practices and adequate controls exist before, during and after the development and implementation of models. Our program involves a three-tiered approach that involves providing a governance framework for the business units, Corporate governance including committee oversight, policies and procedures, inventories, and validation schedules as well as periodic audits. In addition, with respect to models using third party data, the Law and Compliance Departments collaborate with business partners to assess a models intended impacts to ensure that impact is consistent with laws and regulations on use of data in the pricing, underwriting, and marketing of insurance policies.
- To assess the intended impacts of AI models, the company uses an interdisciplinary approach which includes stakeholders from a diverse set of perspectives and areas (AI governance, business user, compliance, data science, government relations, internal audit, law, risk management, etc.). Activities, which occur throughout the life cycle of the AI Model, include initial assessments of proposed AI models, peer reviews and periodic model monitoring. We also consider new laws and regulations along with industry trends during assessments of new AI models. Finally, the company uses a principles-based risk framework to identify key risks with an AI model that may require mitigation through controls. The company uses industry frameworks, such as the AI Risk Management Framework (AI RMF) by the National Institute of Standards and Technology, to validate our approach to AI Risk Management and Governance.
- Using only traditional underwriting information to build our models, in line with current underwriting guideline requirements. We review with Legal, Compliance and Risk prior to implementation of models. We regularly audit results to validate.
- Using only traditional underwriting information to build our models, in line with current underwriting guidelines
- Vetted model by comparing to our own lapse and mortality data
- We comply with legal requirements, retain data supporting the final outcome of an AI application, and in certain cases provide exclusionary criteria so that policies/application decisions meeting those criteria do not get an AI model prediction.

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- We developed an AI/ML advisory group, backed by a formal policy for AI/ML use and approval. This group has legal, compliance, InfoSec, IT, EA, and Data Analytics representation. This group reviews all AI/ML use cases.

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### Marketing

- AI is used to support human decision-making, but no decisions are made by AI. The decision-maker who uses the data remains accountable for any decision.
- For third-party provided tools used in Marketing, contract owners along with leadership are responsible for monitoring outcomes of the tools and that they are operating as intended
- For third-party provided tools used in Marketing, contract owners along with leadership are responsible for monitoring outcomes of the tools and that they are operating as intended.
- [Company] has implemented an AI governance and risk management framework which includes a cross functional working group of representatives from law, risk, model governance, business, and data analytics. The group reviews all AI models for compliance with [Company's] AI principles and with relevant regulations and laws. Generally, marketing AI / ML models are subject to validation testing and continuous monitoring.
- [Company] has implemented an AI governance and risk management framework which includes a cross functional working group of representatives from law, risk, model governance, business, and data analytics. The group reviews all AI models for compliance with [Company's] AI principles and with relevant regulations and laws. Generally, marketing AI / ML models are subject to validation testing and continuous monitoring.
- [Company] ensures its models comply with applicable laws by monitoring changes in the law, working with counsel, and staying abreast of the latest developments in this space.
- Legal and Compliance review/engagement is included in the Model Development process capture in the corresponding procedures.
- Legal, Compliance, Office of Analytics, and Risk Management work in close collaboration with business partners to ensure intended impacts are appropriate. Evaluation includes training and testing algorithms over credible data sets.
- [Company] utilizes a "Three Lines of Defense" model for risk management. In the first line of defense, marketing professionals review data to ensure actual results are consistent with expectations. As a second line of defense, depending on risk level, our Model Risk Management team may independently validate the models for certain use cases. The effective execution of the Model Risk policy is regularly tested by internal audit.
- Models are cross validated during training. Deployed models are monitored for input/target shifts. KPIs are tracked.
- Models are subject to validations on test data, out of sample holdout data, user acceptance testing
- No unique practices with respect to Marketing, but the same pre-implementation setting of expected outcomes and post-implementation monitoring would apply to any future AI/ML implementation here.
- Our First Line Model Governance team performs model validation to evaluate and challenge models for conceptual soundness, data quality, model performance, appropriateness for intended usage, and other checks to make sure proper practices were followed. Our Second Line Model Risk Management team may also perform model validation for the most important, highest risk models.
- Our Model Risk Management Policy applies to all models, including AI/ML. This policy helps to ensure accountability for intended impacts. Model risk management is a shared responsibility of multiple stakeholders across the company. In line with the company's risk framework, the

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linesâ€” [This word was not discernible] structure has been implemented to clearly delineate and assign responsibilities between model owners (1st line), risk (2nd line), and internal audit (3rd line). Furthermore, the Data Policy requires ethical reviews, which track to the NAIC AI Principles, to highlight risks and recommend appropriate controls as applicable.

- [Company] recognizes that as a designer and user of AI systems, it has a responsibility to ensure, inter alia, that its models operate in compliance with all applicable laws and regulations. [Company's] global legal, compliance, ethics, model risk and operational risk management programs provide the accountability frameworks with which the company ensures that its models comply with applicable laws, [Company's] Ethical Principles of AI and [Company's] Code of Conduct. This includes conducting legal reviews, as well as risk-based assessments as needed by the privacy and risk management functions, examining the nature of the data elements used, the potential impact (intended or otherwise) of the model, the proposed models risk profile, compliance with legal and regulatory requirements as well as [Company's] own policies, standards, and procedures.
- The following processes are utilized in reviews of AI models as appropriate to ensure intended impacts are explored and addressed:
  - A cross-functional AI governance committee conducts an initial review of any proposed use of an AI model. The committee considers the AI model use case including whether an AI solution is appropriate and whether the AI model comports with the AI principles, and it includes product-line and privacy attorneys, compliance and risk representatives, data scientists, and technical subject matter experts
  - Privacy attorneys and compliance representatives also conduct privacy impact assessments on sensitive data uses, including those that involve AI models, to ensure the use cases are in compliance with legal and internal policy requirements
  - An information risk consultation assessment is conducted whenever there are changes in people, processes, or technology of solutions. The assessment evaluates the information risks introduced by the changes by evaluating the effects against the information protection framework.
  - An AI explainability and interpretability review provides a final review of the AI model's use case, scope, and development prior to its deployment. The AI model's training data, consumed data, and outputs are reviewed against principles, policies, and best practices. All of these processes involve the business owners implementing the AI model throughout the reviews including the information gathering, feedback, and approval phases. Beyond the business owners, subject matter experts are engaged as necessary to provide additional information about AI models and the implementation."
- [Company's] utilizes a robust Model Risk Management (ModRM) framework to actively mitigate the potential adverse consequences from using models in making critical business decisions and reporting financial results. ModRM assures that sound practices and adequate controls exist before, during and after the development and implementation of models. Our program involves a three-tiered approach that involves providing a governance framework for the business units, Corporate governance including committee oversight, policies and procedures, inventories, and validation schedules as well as periodic audits. In addition, with respect to models using third party data, the Law and Compliance Departments collaborate with business partners to assess a

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model's intended impacts to ensure that impact is consistent with laws and regulations on use of data in the pricing, underwriting, and marketing of insurance policies.

- To assess the intended impacts of AI models, the company uses an interdisciplinary approach which includes stakeholders from a diverse set of perspectives and areas (AI governance, business user, compliance, data science, government relations, internal audit, law, risk management, etc.). Activities, which occur throughout the life cycle of the AI Model, include initial assessments of proposed AI models, peer reviews and periodic model monitoring. We also consider new laws and regulations along with industry trends during assessments of new AI models. Finally, the company uses a principles-based risk framework to identify key risks with an AI model that may require mitigation through controls. The company uses industry frameworks, such as the AI Risk Management Framework (AI RMF) by the National Institute of Standards and Technology, to validate our approach to AI Risk Management and Governance.
- Validation of outputs and monitoring of performance.
- We adhere to the practices required by our third-party platforms such as Google Ads/Facebook Ads with respect to accountability for Data Algorithms intended impacts in marketing.
- We comply with legal requirements, retain data supporting the final outcome of an AI application, and in certain cases provide exclusionary criteria so that policies/application decisions meeting those criteria do not get an AI model prediction.
- We developed an AI/ML advisory group, backed by a formal policy for AI/ML use and approval. This group has legal, compliance, InfoSec, IT, EA, and Data Analytics representation. This group reviews all AI/ML use cases.
- We follow the requirements outlined in Regulation B.
- We may be dependent on LinkedIn if we pursue this target marketing use case with producers.

### Risk Management

- Ad hoc based on specific outcomes
- Legal and Compliance review/engagement is included in the Model Development process capture in the corresponding procedures.
- Legal, Compliance, Office of Analytics, and Risk Management work in close collaboration with business partners to ensure intended impacts are appropriate. Evaluation includes training and testing algorithms over credible data sets.
- [Company] does not currently have any use cases for artificial intelligence or machine learning in Risk Management. If [company] were to onboard any risk-management tool, [company] would take a risk-based approach for testing for intended impact consistent with Question 2 above. In preparation for AI/ML use cases emerging in the future, [company] is enhancing its processes to ensure early identification of AI model usage across the Company.
- Models are subject to: validations on test data, out of sample holdout data, user acceptance testing
- No unique practices with respect to Risk Management, but the same pre-implementation setting of expected outcomes and post-implementation monitoring would apply to any future AI/ML implementation here.
- Our First Line Model Governance team performs model validation to evaluate and challenge models for conceptual soundness, data quality, model performance, appropriateness for intended usage, and other checks to make sure proper practices were followed. Our Second Line

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Model Risk Management team may also perform model validation for the most important, highest risk models.

- Our Model Risk Management Policy applies to all models, including AI/ML. This policy helps to ensure accountability for intended impacts. Model risk management is a shared responsibility of multiple stakeholders across the company. In line with the company's risk framework, the "three lines" structure has been implemented to clearly delineate and assign responsibilities between model owners (1st line), risk (2nd line), and internal audit (3rd line). Furthermore, the Data Policy requires ethical reviews, which track to the NAIC AI Principles, to highlight risks and recommend appropriate controls as applicable.
- [Company] recognizes that as a designer and user of AI systems, it has a responsibility to ensure, inter alia, that its models operate in compliance with all applicable laws and regulations. [Company's] global legal, compliance, ethics, model risk and operational risk management programs provide the accountability frameworks with which [Company] ensures that its models comply with applicable laws, [Company's] Ethical Principles of AI and [Company's] Code of Conduct. This includes conducting legal reviews, as well as risk-based assessments as needed by the privacy and risk management functions, examining the nature of the data elements used, the potential impact (intended or otherwise) of the model, the proposed model's risk profile, compliance with legal and regulatory requirements as well as [Company's] own policies, standards, and procedures.
- The following processes are utilized in reviews of AI models as appropriate to ensure intended impacts are explored and addressed:
  - A cross-functional AI governance committee conducts an initial review of any proposed use of an AI model. The committee considers the AI model use case including whether an AI solution is appropriate and whether the AI model comports with the AI principles, and it includes product-line and privacy attorneys, compliance and risk representatives, data scientists, and technical subject matter experts
  - Privacy attorneys and compliance representatives also conduct privacy impact assessments on sensitive data uses, including those that involve AI models, to ensure the use cases are in compliance with legal and internal policy requirements
  - An information risk consultation assessment is conducted whenever there are changes in people, processes, or technology of solutions. The assessment evaluates the information risks introduced by the changes by evaluating the effects against the information protection framework.
  - An AI explainability and interpretability review provides a final review of the AI model's use case, scope, and development prior to its deployment. The AI model's training data, consumed data, and outputs are reviewed against principles, policies, and best practices.All of these processes involve the business owners implementing the AI model throughout the reviews including the information gathering, feedback, and approval phases. Beyond the business owners, subject matter experts are engaged as necessary to provide additional information about AI models and the implementation."
- Using only traditional underwriting information to build our models, in line with current underwriting guideline requirements. We review with Legal, Compliance and Risk prior to implementation of models. We regularly audit results to validate.

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- Using only traditional underwriting information to build our models, in line with current underwriting guidelines
- We comply with legal requirements, retain data supporting the final outcome of an AI application, and in certain cases provide exclusionary criteria so that policies/application decisions meeting those criteria do not get an AI model prediction.
- We developed an AI/ML advisory group, backed by a formal policy for AI/ML use and approval. This group has legal, compliance, InfoSec, IT, EA, and Data Analytics representation. This group reviews all AI/ML use cases.
- We've adopted practices with a governance and risk management framework surrounding all AI governance.



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### C. Accountability for Data Algorithms' Unintended Impacts

The companies were asked to respond to the following question with respect to (1) pricing and underwriting, (2) marketing, and (3) risk management:

- “Have you adopted practices with respect to Accountability for Data Algorithms' Unintended Impacts for each operational area below.”

The responses by operational area are provided below.

#### Pricing & Underwriting

- Actuaries, with guidance from product experts and [Company] law department, are responsible for ensuring that variables used for pricing and underwriting have sound actuarial relationships to the source of risk. [Company] takes a risk-based approach for the testing of unintended impact. A cross-functional working group with experts from legal, compliance, privacy, model risk and data science will determine if testing for unintended impacts is necessary depending on the risk level of the use case.
- Ad hoc based on specific outcomes
- [Company] facilitates mandatory training, as needed, to educate employees on compliance topics and has a system for review, analysis, and disbursement of new laws.
- Detailed review of results with subject matter experts, validation of results on unseen data
- [Company] has implemented an AI governance and risk management framework which includes a cross functional working group of representatives from law, risk, model governance, business, and data analytics. The group reviews all AI models for compliance with [Company's] AI principles and with relevant regulations and laws. Additionally, all AI / ML models are subject to validation testing and continuous monitoring.
- [Company] has implemented an AI governance and risk management framework which includes a cross functional working group of representatives from law, risk, model governance, business, and data analytics. The group reviews all AI models for compliance with [Company's] AI principles and with relevant regulations and laws. Additionally, all AI / ML models are subject to validation testing and continuous monitoring.
- In addition to practices outlined for intended impacts, our Model Risk Management framework includes aspects of model performance which require continuous monitoring and controls to track performance metrics against specific thresholds. These metrics vary depending on the type of AI model and include but are not limited to:
  - Gini Coefficient
  - Kolmogorov-Smirnov (KS) Score
  - Accuracy, Precision,
  - Recall,
  - F-1 Score
  - Population Stability Index

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- Character Stability Index AI Model Development and Implementation requires an evaluation and risk assessment of potential Model Biases. Model Bias can include various types of Biases including but not limited to:
  - Stability Biases
  - Pattern-Recognition Biases
  - Interest Biases
  - Social Biases For instances of Performance Evaluation of non-model drift metrics such as bias, an appropriate review frequency is to be established between the Model Charter and the Model Owner and documented in the Model Inventory. The definition of review frequency is to be based off an assessment of both Materiality and Feasibility.
- Legal and Compliance review/engagement is included in the Model Development process capture in the corresponding procedures.
- Legal, Compliance, Office of Analytics, and Risk Management work in close collaboration with business partners to ensure unintended impacts are identified and mitigated. Evaluation includes stress testing, quantifying and documenting limitations, as well as close monitoring of application results to identify any unintended impacts.
- [Company] performs testing as deemed necessary of its models for unintended biases and access to insurance by age, gender, and race and Milliman monitors results on an ongoing basis. [Company's] Risk Score products are subject to an internal policy of peer review and sign-off that is inclusive of testing for unintended impacts.
- [Company] products undergo an internal process of peer review and sign-off to ensure they are effective, thoroughly tested, and appropriate for their intended uses. All users of Milliman IntelliScripts are responsible for accountability for the way in which they implement our products within their own processes.
- Model risk management modeling standards include guidance for bias/fairness testing and ongoing model performance monitoring.
- Our Model Risk Management Policy applies to all models, including AI/ML. This policy helps to ensure accountability for unintended impacts. Model risk management is a shared responsibility of multiple stakeholders across the company. In line with the company's risk framework, the "lines of responsibility" structure has been implemented to clearly delineate and assign responsibilities between model owners (1st line), risk (2nd line), and internal audit (3rd line). Furthermore, the Data Policy requires ethical reviews, which track to the NAIC AI Principles, to highlight risks and recommend appropriate controls as applicable.
- Our vendors provide periodic reporting on their monitoring efforts in regard to quantitative testing. In turn, we review these reports as they are provided to understand impacts.
- Please see attachment.
- [Company] recognizes that as a designer and user of AI systems, it has a responsibility to ensure, inter alia, that its models operate in compliance with all applicable laws and regulations. [Company's] global legal, compliance, ethics, model risk and operational risk management programs provide the accountability frameworks with which [Company] ensures that its models comply with applicable laws, [Company's] Ethical Principles of AI and [Company's] Code of Conduct. This includes conducting legal reviews, as well as risk-based assessments as needed by the privacy and risk management functions, examining the nature of the data elements used,

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the potential impact (intended or otherwise) of the model, the proposed model's risk profile, compliance with legal and regulatory requirements as well as [Company's] own policies, standards, and procedures.

- Specific to underwriting models, we review model variables with a cross-functional group of experts to identify variables that may act as a proxy for a protected class. Additionally, we have a statistical approach to ensure models do not result in a negative outcome by race that is disproportionate to the underlying risk (i.e., mortality). Not applicable to pricing assumptions.
- [Company] reviews actual outcomes relative to expectations so that appropriate adjustments can be made if needed. [Company's] third-party vendors also perform testing of their models for unintended biases and monitor results on an ongoing basis.
- The Company appreciates the importance of assuring that innovative technology is deployed thoughtfully and in such a way that it does not unintentionally result in unfair discrimination and that it remains compliant with applicable laws and regulations. Our developing control framework contemplates model risk management governance, front-end reviews and challenges of new data elements, as well as back-end testing and model validation. On the front end, for the Company's proprietary and internally developed tool for underwriting of life insurance applications, the Company utilizes a change control process for any changes made to the tool's underwriting guidelines, including use of new data. For back-end testing, we have an engagement with an independent third party to conduct disparate impact analysis of the tool's outcomes based on race, ethnicity, and gender. Because the Company does not collect or have access to race and ethnicity as part of its application process (a control implemented many years ago to protect against underwriting based on protected class), our third-party expert relies on a Bayesian Improved Surname Geocoding (BISG) proxy method as a first step in conducting the disparate impact analysis. BISG combines geography- and surname-based information into a single proxy probability for race and ethnicity. Once BISG is complete, metrics for assessing if disparate impact exist are employed and any differences are reviewed further by our stakeholder governance group in conjunction with the third-party expert. Results from disparate impact analysis are reviewed and considered by this team, including any determinations for action, if needed. The Company has an ongoing engagement with the third party for continued periodic review as needed. Monitoring and testing responsibility of our underwriting tool resides with a cross-disciplinary team of underwriting, pricing, product, actuarial and control function support under our governance framework. In addition to external review/analyses conducted, this cross-disciplinary team reviews routine reporting on underwriting decision statistics as part of ongoing monitoring of outcomes.
- The [Company's] practices with respect to accountability for data algorithms Unintended Impacts in underwriting include thorough testing throughout the development and implementation cycle to minimize the risk that the model does something that was not intended. Changes to the model and model inputs after implementation are tested to minimize the risk of unintended impacts.
- The following processes are utilized in reviews of AI models as appropriate to ensure unintended impacts are explored and addressed:
  - A cross-functional AI governance committee conducts an initial review of any proposed use of an AI model. The committee considers the AI model use case including whether an AI solution is appropriate and whether the AI model comports with the AI principles,

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and it includes product-line and privacy attorneys, compliance and risk representatives, data scientists, and technical subject matter experts.

- Privacy attorneys and compliance representatives also conduct privacy impact assessments on sensitive data uses, including those that involve AI models, to ensure the use cases are in compliance with legal and internal policy requirements. An information risk consultation assessment is conducted whenever there are changes in people, processes, or technology of solutions. The assessment evaluates the information risks introduced by the changes by evaluating the effects against the information protection framework.
- An AI explainability and interpretability review provides a final review of the AI model's use case, scope, and development prior to its deployment. The AI model's training data, consumed data, and outputs are reviewed against principles, policies, and best practices.

All of these processes involve the business owners implementing the AI model throughout the reviews including the information gathering, feedback, and approval phases. Beyond the business owners, subject matter experts are engaged as necessary to provide additional information about AI models and the implementation."

- [Company] utilizes a robust Model Risk Management (ModRM) framework to actively mitigate the potential adverse consequences from using models in making critical business decisions and reporting financial results. ModRM assures that sound practices and adequate controls exist before, during and after the development and implementation of models. Our program involves a three-tiered approach that involves providing a governance framework for the business units, Corporate governance including committee oversight, policies and procedures, inventories, and validation schedules as well as periodic audits. In addition, with respect to models using third party data, the Law and Compliance Departments collaborate with business partners to assess potential for, and reduce the risk of, unintended impacts through an established and required review process of proposed or rebuilt data algorithm models.
- Underwriting models utilize data that would be considered traditional underwriting factors (e.g., medical history or prescription history.). We do not use any "non-traditional" data elements, such as social media or credit scores. Underwriting models are tested for bias on a regular basis. Furthermore, we stay up to date on developments related to algorithmic accountability policies, such as the Colorado Algorithm and Predictive Model Governance Regulation.
- Using only traditional underwriting information to build our models, in line with current underwriting guideline requirements. We review with Legal, Compliance and Risk prior to implementation of models.
- Using only traditional underwriting information to build our models, in line with current underwriting guidelines
- We comply with legal requirements, retain data supporting the final outcome of an AI application, and in certain cases provide exclusionary criteria so that policies/application decisions meeting those criteria do not get an AI model prediction.
- We developed an AI/ML advisory group, backed by a formal policy for AI/ML use and approval. This group has legal, compliance, InfoSec, IT, EA, and Data Analytics representation. This group reviews all AI/ML use cases.

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- We have a monitoring process in place to regularly check whether statistical metrics of model drift and performance are indicating model decay. If applicable, we will also monitor for changes in relevant business metrics and/or unfair discrimination metrics while the model is being used.
- With respect to accountability for unintended impacts, the company uses the same interdisciplinary approach which includes stakeholders from a diverse set of perspectives and areas (AI governance, business user, compliance, data science, government relations, internal audit, law, risk management, etc.). Activities, which occur throughout the life cycle of the AI Model, include initial assessments of proposed AI models, peer reviews and periodic model monitoring. We also consider new laws and regulations along with industry trends during assessments of new AI models and leverage academic partnerships to promote research on AI and ML topics. Finally, the company uses a principles-based risk framework to identify key risks with an AI model that may require mitigation through controls. The company uses industry frameworks, such as the AI Risk Management Framework (AI RMF) by the National Institute of Standards and Technology, to validate our approach to AI Risk Management and Governance.

### Marketing

- Ad hoc based on specific outcomes
- AI is used to support human decision-making, but no decisions are made by AI. If a data algorithm produced unintended results, the results would not be used.
- Algorithms used in marketing are developed and maintained by vendor solutions (e.g., google analytics/salesforce). We partner with those entities to understand the impact and explore unintended impacts of our marketing presence and activity on those platforms.
- Detailed review of results with subject matter experts, validation of results on unseen data
- [Company] has implemented an AI governance and risk management framework which includes a cross functional working group of representatives from law, risk, model governance, business, and data analytics. The group reviews all AI models for compliance with [Company's] AI principles and with relevant regulations and laws. Generally, marketing AI / ML models are subject to validation testing and continuous monitoring.
- [Company] has implemented an AI governance and risk management framework which includes a cross functional working group of representatives from law, risk, model governance, business, and data analytics. The group reviews all AI models for compliance with [Company's] AI principles and with relevant regulations and laws. Generally, marketing AI / ML models are subject to validation testing and continuous monitoring.
- [Company] ensures its models comply with applicable laws by monitoring changes in the law, working with counsel, and staying abreast of the latest developments in this space.
- Legal and Compliance review/engagement is included in the Model Development process capture in the corresponding procedures.
- Legal, Compliance, Office of Analytics, and Risk Management work in close collaboration with business partners to ensure unintended impacts are identified and mitigated. Evaluation includes stress testing, quantifying and documenting limitations, as well as close monitoring of application results to identify any unintended impacts.
- Marketing experts, where necessary and appropriate, work with the (Company) law department to ensure that model inputs and variables are consistent with privacy laws and insurance laws prohibiting unfair discrimination.

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- Our Model Risk Management Policy applies to all models, including AI/ML. This policy helps to ensure accountability for unintended impacts. Model risk management is a shared responsibility of multiple stakeholders across the company. In line with the company's risk framework, the "lines" (This word was not discernible) structure has been implemented to clearly delineate and assign responsibilities between model owners (1st line), risk (2nd line), and internal audit (3rd line). Furthermore, the Data Policy requires ethical reviews which highlight risks and recommend appropriate controls as applicable.
- [Company] recognizes that as a designer and user of AI systems, it has a responsibility to ensure, inter alia, that its models operate in compliance with all applicable laws and regulations. [Company's] global legal, compliance, ethics, model risk and operational risk management programs provide the accountability frameworks with which the company ensures that its models comply with applicable laws, [Company's] Ethical Principles of AI and [Company's] Code of Conduct. This includes conducting legal reviews, as well as risk-based assessments as needed by the privacy and risk management functions, examining the nature of the data elements used, the potential impact (intended or otherwise) of the model, the proposed model's risk profile, compliance with legal and regulatory requirements as well as [Company]'s own policies, standards, and procedures.
- The following processes are utilized in reviews of AI models as appropriate to ensure unintended impacts are explored and addressed:
  - A cross-functional AI governance committee conducts an initial review of any proposed use of an AI model. The committee considers the AI model use case including whether an AI solution is appropriate and whether the AI model comports with the AI principles, and it includes product-line and privacy attorneys, compliance and risk representatives, data scientists, and technical subject matter experts.
  - Privacy attorneys and compliance representatives also conduct privacy impact assessments on sensitive data uses, including those that involve AI models, to ensure the use cases are in compliance with legal and internal policy requirements. An information risk consultation assessment is conducted whenever there are changes in people, processes, or technology of solutions. The assessment evaluates the information risks introduced by the changes by evaluating the effects against the information protection framework.
  - An AI explainability and interpretability review provides a final review of the AI model's use case, scope, and development prior to its deployment. The AI model's training data, consumed data, and outputs are reviewed against principles, policies, and best practices.

All of these processes involve the business owners implementing the AI model throughout the reviews including the information gathering, feedback, and approval phases. Beyond the business owners, subject matter experts are engaged as necessary to provide additional information about AI models and the implementation."

- (Company) utilizes a robust Model Risk Management (ModRM) framework to actively mitigate the potential adverse consequences from using models in making critical business decisions and reporting financial results. ModRM assures that sound practices and adequate controls exist before, during and after the development and implementation of models. Our program involves a three-tiered approach that involves providing a governance framework for the business units, Corporate governance including committee oversight, policies and procedures, inventories, and



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validation schedules as well as periodic audits. In addition, with respect to models using third party data, the Law and Compliance Departments collaborate with business partners to assess potential for, and reduce the risk of, unintended impacts through an established and required review process of proposed or rebuilt data algorithm models.

- Validation of outputs, monitoring of performance and bias analysis.
- We adhere to the practices required by our third-party platforms such as Google Ads/Facebook Ads with respect to accountability for Data Algorithms unintended impacts in marketing.
- We comply with legal requirements, retain data supporting the final outcome of an AI application, and in certain cases provide exclusionary criteria so that policies/application decisions meeting those criteria do not get an AI model prediction.
- We developed an AI/ML advisory group, backed by a formal policy for AI/ML use and approval. This group has legal, compliance, InfoSec, IT, EA, and Data Analytics representation. This group reviews all AI/ML use cases.
- We follow the requirements outlined in Regulation B.
- We have a monitoring process in place to regularly check whether statistical metrics of model drift and performance are indicating model decay. If applicable, we will also monitor for changes in relevant business metrics and/or unfair discrimination metrics while the model is being used.
- We may be dependent on LinkedIn if we pursue this target marketing use case with producers.
- With respect to accountability for unintended impacts, the company uses the same interdisciplinary approach which includes stakeholders from a diverse set of perspectives and areas (AI governance, business user, compliance, data science, government relations, internal audit, law, risk management, etc.). Activities, which occur throughout the life cycle of the AI Model, include initial assessments of proposed AI models, peer reviews and periodic model monitoring. We also consider new laws and regulations along with industry trends during assessments of new AI models and leverage academic partnerships to promote research on AI and ML topics. Finally, the company uses a principles-based risk framework to identify key risks with an AI model that may require mitigation through controls. The company uses industry frameworks, such as the AI Risk Management Framework (AI RMF) by the National Institute of Standards and Technology, to validate our approach to AI Risk Management and Governance.

### Risk Management

- Ad hoc based on specific outcomes
- Detailed review of results with subject matter experts, validation of results on unseen data
- Legal and Compliance review/engagement is included in the Model Development process capture in the corresponding procedures.
- Legal, Compliance, Office of Analytics, and Risk Management work in close collaboration with business partners to ensure unintended impacts are identified and mitigated. Evaluation includes stress testing, quantifying and documenting limitations, as well as close monitoring of application results to identify any unintended impacts.
- [Company] does not currently have any use cases for artificial intelligence or machine learning in Risk Management. If [company] were to onboard any risk-management tool, [Company] would take a risk-based approach for testing for unintended impact consistent with Question 2 above. In preparation for AI/ML use cases emerging in the future, [Company] is enhancing its processes to ensure early identification of AI model usage across the Company.

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- Our Model Risk Management Policy applies to all models, including AI/ML. This policy helps to ensure accountability for unintended impacts. Model risk management is a shared responsibility of multiple stakeholders across the company. In line with the company's risk framework, the "lines" (This word was not discernible) structure has been implemented to clearly delineate and assign responsibilities between model owners (1st line), risk (2nd line), and internal audit (3rd line). Furthermore, the Data Policy requires ethical reviews which highlight risks and recommend appropriate controls as applicable.
- [Company] recognizes that as a designer and user of AI systems, it has a responsibility to ensure, inter alia, that its models operate in compliance with all applicable laws and regulations. [Company's] global legal, compliance, ethics, model risk and operational risk management programs provide the accountability frameworks with which the company ensures that its models comply with applicable laws, [Company's] Ethical Principles of AI and [Company's] Code of Conduct. This includes conducting legal reviews, as well as risk-based assessments as needed by the privacy and risk management functions, examining the nature of the data elements used, the potential impact (intended or otherwise) of the model, the proposed model's risk profile, compliance with legal and regulatory requirements as well as [Company's] own policies, standards, and procedures.
- The following processes are utilized in reviews of AI models as appropriate to ensure unintended impacts are explored and addressed:
  - A cross-functional AI governance committee conducts an initial review of any proposed use of an AI model. The committee considers the AI model use case including whether an AI solution is appropriate and whether the AI model comports with the AI principles, and it includes product-line and privacy attorneys, compliance and risk representatives, data scientists, and technical subject matter experts.
  - Privacy attorneys and compliance representatives also conduct privacy impact assessments on sensitive data uses, including those that involve AI models, to ensure the use cases are in compliance with legal and internal policy requirements. An information risk consultation assessment is conducted whenever there are changes in people, processes, or technology of solutions. The assessment evaluates the information risks introduced by the changes by evaluating the effects against the information protection framework.
  - An AI explainability and interpretability review provides a final review of the AI model's use case, scope, and development prior to its deployment. The AI model's training data, consumed data, and outputs are reviewed against principles, policies, and best practices.

All of these processes involve the business owners implementing the AI model throughout the reviews including the information gathering, feedback, and approval phases. Beyond the business owners, subject matter experts are engaged as necessary to provide additional information about AI models and the implementation

- Using only traditional underwriting information to build our models, in line with current underwriting guideline requirements. We review with Legal, Compliance and Risk prior to implementation of models.
- Using only traditional underwriting information to build our models, in line with current underwriting guidelines



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- We comply with legal requirements, retain data supporting the final outcome of an AI application, and in certain cases provide exclusionary criteria so that policies/application decisions meeting those criteria do not get an AI model prediction.
- We developed an AI/ML advisory group, backed by a formal policy for AI/ML use and approval. This group has legal, compliance, InfoSec, IT, EA, and Data Analytics representation. This group reviews all AI/ML use cases.
- We have a monitoring process in place to regularly check whether statistical metrics of model drift and performance are indicating model decay. If applicable, we will also monitor for changes in relevant business metrics and/or unfair discrimination metrics while the model is being used.
- We've adopted best practices with a governance and risk management framework surrounding all AI governance.

### D. Accountability Ensure Compliance with Laws Including those Related to Unfair Discrimination

The companies were asked to respond to the following question with respect to (1) pricing and underwriting, (2) marketing, and (3) risk management:

- “Briefly describe your practices with respect to Accountability for Appropriate Resources and Knowledge Involved to Ensure Compliance with Laws Including those Related to Unfair Discrimination.”

The responses by operational area are provided below.

#### Pricing & Underwriting

- [Company] has robust policies and procedures in place that are grounded within NAIC’s broader data governance, risk governance, and model governance practices to carefully consider any external data sources, data elements, models or algorithms before they are used in an insurance practice. The company carefully considers how, why, and where data or a model will be used. These policies and procedures help to ensure accountability for the data or model’s intended and unintended impacts. Descriptions of these practices are outlined below.
  - Data Governance: Data is collected and used in accordance with the company’s data ethics principles, which state that data collection, use, and access be fair and ethical, accountable, compliant, transparent, and secure/safe/robust. The company also has systems and platforms in place for data collection, tracking, storage, and governance that allow the company to govern what is brought in, who can access it, and how it can be used.
  - General Risk Governance: There are several risk intake processes in place that assist the company in identifying what additional review and evaluation may be needed. In these processes, information is collected that identifies the type of data involved, how it is being used, the source of the data, business purpose for the data, etc., as well as any algorithms or predictive models that may be involved. These same processes are employed for algorithms or predictive models built at (company) and those purchased from a third party. For instance, with any new technology, a risk assessment process facilitates reviews by Compliance, Privacy, Records Management, Data Governance, Law, and

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Information Risk & Cybersecurity. If a model or algorithm is being developed and put into production, the company's model governance framework is considered and deployed where applicable.

- With regard to underwriting, additional controls are in place to ensure data used in underwriting is relevant and related to the risk being insured against. This is true for new data that may be relevant to mortality or morbidity (depending on the product line) but also with historical data as the medical field continues to advance. The company has a team of medical professionals who continually study and assess all underwriting inputs to ensure the company is accurately assessing risk.
- Model Governance: [Company] has a long-standing model risk management framework designed to effectively identify, measure, and manage model risks for internally and externally developed models. The framework has continued to evolve to be consistent with the nature, scale, complexity, and risk of models used within the company. [Company] maintains a model governance policy that addresses primary elements related to managing model risk including identification of models, assessing level of governance required based on materiality and impact of inherent risk;; establishing roles and responsibilities associated with managing models and model risk;; and defining control procedures and techniques for the development, maintenance and use of models, including model validation, review and documentation. Roles established in the policy include model developers, users, reviewers, and owners.
- As related to this survey, the model user takes on primary responsibilities including: providing subject matter expertise in the development of the model; identifying potentially significant data sets and sources; ensuring that there is an appropriate evaluation (with a satisfactory conclusion) of whether the data and its use meets applicable legal and other company requirements (data governance, privacy, security, etc.), including sensitive factor review, any applicable bias testing, and the company's ethical standards; ensuring an appropriate degree and form of explainability (e.g. using SHAP values displayed by the model monitoring framework to provide an understandable statement of how the model's predictions are generated from inputs and the operation of the model) and interpretability (i.e. ability to interpret how the results of the model should be understood in the context of the model's designed functional purpose) given the nature of the model use; assessing model results to ensure spurious correlations are not driving outcomes; and communicating business constraints to the model developer so they are appropriately reflected in the techniques used to develop the model. The model user is also responsible for monitoring the model when used in the production environment; establishing thresholds to identify when the model is no longer performing at the appropriate level; identifying when model results are no longer valid; and for establishing processes to remediate issues identified.

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- All of these processes are designed to ensure that data, data elements, models and algorithms are used appropriately and responsibly, in line with the given business use case, accounting for both intended and unintended impacts.
- All models are subject to our Model Governance program, which includes policies, procedures and standards designed to comply with applicable legal requirements. Models are subject to legal review in accordance with our Model Governance program.
- Automated underwriting programs are reviewed by Legal and Compliance to ensure adherence to laws and regulations. All our models are tested for bias on a regular basis.
- [Company] facilitates mandatory training, as needed, to educate employees on compliance topics and has a system for review, analysis, and disbursement of new laws.
- Designated Legal and Compliance POCs are provided to the Model Owner for Legal and Compliance engagement during the Model Development process.
- For AI models used in pricing and underwriting, we have policies and procedures in place to ensure compliance with applicable laws including those related to unfair discrimination. Lawyers and compliance professionals assess the AI model's conformance to applicable laws and regulations. Additionally, there are controls in the business processes, such as adverse action notices, that allow for ongoing compliance with applicable laws and a process exists to monitor for new laws and regulations that have applicability to the AI models. Ethical considerations and responsible data science are general themes within the Data Science organization, which develops the company's AI models. For AI models developed for pricing and underwriting purposes, mitigation of bias and avoidance of unfair discrimination is a requirement adhered to by all areas involved with development, deployment and governance of the AI model in close collaboration with the compliance and law areas.
- [Company] has implemented an AI governance and risk management framework which includes a cross functional working group of representatives from law, risk, model governance, business, and data analytics. The group reviews all AI models for compliance with [Company's] AI principles and with relevant regulations and laws. Additionally, all AI / ML models are subject to validation testing and continuous monitoring. [Company] is committed to adhering to and complying with all applicable laws, rules and regulations governing the prevention of intentional unfair discrimination, including without limitation, Unfair Trade Practices laws. This commitment extends to our evolving use of new data sources and/or artificial intelligence to enhance traditional insurance practices. We strive to ensure that all similarly situated individuals are treated fairly and equitably and are not subject to bias, whether intentional or unintentional.
- [Company] has implemented an AI governance and risk management framework which includes a cross functional working group of representatives from law, risk, model governance, business, and data analytics. The group reviews all AI models for compliance with [Company's] AI principles and with relevant regulations and laws. Additionally, all AI / ML models are subject to validation testing and continuous monitoring. [Company] is committed to adhering to and complying with all applicable laws, rules and regulations governing the prevention of intentional unfair discrimination, including without limitation, Unfair Trade Practices laws. This commitment extends to our evolving use of new data sources and/or artificial intelligence to enhance traditional insurance practices. We strive to ensure that all similarly situated individuals are treated fairly and equitably and are not subject to bias, whether intentional or unintentional.

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- [Company] has policies for use around data deployment, data governance and risk management to avoid unfair discrimination.
- Legal, Compliance and Risk Management functions are included in business development activities. Regulatory Change Management procedure is in place and all business functions are responsible for compliance with the procedure
- Legal, Compliance, Office of Analytics, and Risk Management work in close collaboration with business partners to ensure compliance with laws including those related to unfair discrimination. Processes include formal review and testing of model results.
- [Company] monitors regulatory activity and updates its models, processes, and data as needed to conform with applicable regulations and works with outside counsel to ensure awareness of new developments.
- [Company] products undergo an internal process of peer review and sign-off to ensure they are effective, thoroughly tested, and appropriate for their intended uses. All users of (Company Product) are responsible for accountability for the way in which they implement our products within their own processes.
- Our legislative and regulatory compliance tracking process monitors laws and regulations related to unfair discrimination and implements such requirements as applicable.
- Our Model Risk Management Policy applies to all models, including AI/ML. This policy helps to ensure accountability for appropriate resourcing and knowledge to ensure compliance with laws. Model risk management is a shared responsibility of multiple stakeholders across the company. In line with the company's risk framework, the "lines of responsibility" (This word was not discernible) structure has been implemented to clearly delineate and assign responsibilities between model owners (1st line), risk (2nd line), and internal audit (3rd line). Furthermore, the Data Policy requires ethical reviews, which track to the NAIC AI Principles, to highlight risks and recommend appropriate controls as applicable. The ethical reviews are conducted by compliance professionals in conjunction with the data science team.
- Our practices have been described previously in the Compliance and Unintended Impacts sections. To-date, the Company has utilized third parties to consult on all bias testing which, together with the legal and compliance review provided through the AI Governance Committee and model risk management framework, enables us to ensure compliance with all applicable laws related to unfair discrimination.
- Our procedures comply with laws related to unfair discrimination in pricing and underwriting.
- Pricing and underwriting experts work with legal to ensure that model inputs and variables are consistent with privacy laws and insurance laws prohibiting unfair discrimination.
- [Company's] legal and compliance department are involved in the review and assessment of Data Algorithms and AI systems and provide legal and compliance advice to ensure that legal requirements are identified and legal guidance is implemented.
- Regulatory compliance is tracked by our in-house legal department.
- Specific to underwriting models, we review model variables with a cross-functional group of experts to identify variables that may act as a proxy for a protected class. Additionally, we have a statistical approach to ensure models do not result in a negative outcome by race that is disproportionate to the underlying risk (i.e., mortality). Not applicable to pricing assumptions.
- [Company], as well as its vendors, monitor regulatory activity and update models, processes and data as needed to conform with applicable regulations.

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- [Company] is committed to establishing and maintaining a governance framework that helps to ensure that use of AI/ML and future, similar technologies do not unintentionally result in unfair discrimination in the underwriting process and in pricing while remaining compliant with all applicable laws and regulations. The Company has in place a mature regulatory change management process which utilizes multiple sources of information to document, track and communicate new laws and regulations to the impacted business areas. The Company utilizes routine reporting and recurring meetings across control functions and business to review new legislative or regulatory requirements and to address implementation where required. Our underwriting and pricing teams are recipients of law and rule changes through this process and are responsible for understanding current underwriting rules and guidelines, as well as staying abreast of new and emerging laws and regulations and how they may impact their processes, including the use of any machine learning algorithms and its use of external consumer data. Our underwriting automation leadership team reviews our significant proposed changes to these technologies, or any changes made that may affect the underwriting guidelines. These teams receive guidance from appropriate control groups.
- [Company] recently established a cross-functional team to document our governance and monitor AI usage and approaches throughout the organization. This team brings together personnel from the operations, actuarial, legal and compliance departments, among others, to promote shared knowledge, transparency and accountability. Through the [Company]'s legislative monitoring process, applicable bills and proposed regulations regarding unfair discrimination and underwriting are also routed to the appropriate personnel to review for any necessary changes to current processes or models. Additionally, employees from our actuarial, underwriting, compliance and legal departments belong to various industry organizations through which they can stay apprised of current advances, industry developments and areas of regulatory concern with regard to AI.
- The following processes are utilized in reviews of AI models as appropriate to ensure the potential for unfair discrimination is mitigated:
  - A cross-functional AI governance committee conducts an initial review of any proposed use of an AI model. The committee considers the AI model use case including whether an AI solution is appropriate and whether the AI model comports with the AI principles, and it includes product-line and privacy attorneys, compliance and risk representatives, data scientists, and technical subject matter experts. -Privacy attorneys and compliance representatives also conduct privacy impact assessments on sensitive data uses, including those that involve AI models, to ensure the use cases are in compliance with legal and internal policy requirements.
  - An AI explainability and interpretability review provides a final review of the AI model's use case, scope, and development prior to its deployment. The AI model's training data, consumed data, and outputs are reviewed against principles, policies, and best practices.
  - A committee of underwriters, product-line attorneys, privacy attorneys, and other subject matter experts meets to discuss legal requirements and other issues surrounding underwriting matters including laws and policies impacting AI model use.

All of these processes involve the business owners implementing the AI model throughout the reviews including the information gathering, feedback, and approval phases. Beyond the

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business owners, subject matter experts are engaged as necessary to provide additional information about AI models and the implementation."

- The Law and Compliance Departments, on a regular and ongoing basis, examine the business environment, identifying changes in applicable laws, regulations and other events with the potential to significantly affect the operation of their business areas, including laws related to use of data algorithms and unfair discrimination. Compliance then notifies the impacted business areas of the relevant requirements and risks and collaborates with business partners to implement controls, processes and procedures required to comply with new or changing laws and regulations in a timely manner. This includes Law and Compliance collaborating with business partners to assess the risk of new or rebuilt data models primarily involving third party data, to identify potential risks of non-compliance due to unfair discrimination with analysis of the risks and risk mitigation recommendations.
- Through our Office of Governmental Affairs team, we make sure we are up to date on the latest laws and regulations at all levels of government concerning unfair discrimination in models. The parties involved in model development (e.g., model developers, business owners) regularly consult with the First Line Model Governance, Legal, and Compliance functions as well as outside counsel if necessary to ensure compliance with all applicable laws. In addition, our First Line Model Governance team has capabilities in unfair discrimination testing approaches and can help conduct testing when needed.
- Using only traditional underwriting information to build our models, in line with current underwriting guideline requirements. We review with Legal, Compliance and Risk prior to implementation of models.
- Using only traditional underwriting information to build our models, in line with current underwriting guidelines
- We comply with all laws related to unfair discrimination in pricing and underwriting by adhering to all applicable laws and regs that are monitored by our legislative and regulatory monitoring system.
- We developed an AI/ML advisory group, backed by a formal policy for AI/ML use and approval. This group has legal, compliance, InfoSec, IT, EA, and Data Analytics representation. This group reviews all AI/ML use cases.
- We have launched a cross-functional project to monitor anti-discrimination legislation, train our staff on its requirements, and ensure our compliance with the laws being developed (e.g., Colorado SB-169)
- We have regular meetings with legal and compliance experts to ensure compliance with laws on unfair discrimination. We also plan to adopt [Parent Company]'s upcoming best practices on Fair and Explainable AI.
- We maintain a legs/regs process for updating the business on any changes to the law and have a 2nd Line of Defense testing program to test for compliance with any applicable laws. Internal Audit also conducts testing for compliance.

### Marketing

- AI is used to support human decision-making, but no decisions are made by AI. Decisions made using those data algorithms are subject to the company's compliance policies and the same human resources would be available in determining whether a decision was appropriate.



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- All models are subject to our Model Governance program, which includes policies, procedures and standards designed to comply with applicable legal requirements. Models are subject to legal review in accordance with our Model Governance program.
- Compliance consultation is part of our Model Risk Management Process including completing a Privacy Impact Assessment.
- Designated Legal and Compliance POCs are provided to the Model Owner for Legal and Compliance engagement during the Model Development process.
- For AI models used in marketing, we have policies and procedures in place to ensure compliance with applicable laws including those related to unfair discrimination. Lawyers and compliance professionals assess the AI model conformance to applicable laws and regulations. Additionally, there are controls in the business processes, that allow for ongoing compliance with applicable laws and a process exists to monitor for new laws and regulations that have applicability to the AI models. Ethical considerations and responsible data science are general themes within the Data Science organization, which develops the company AI models. For AI models developed for marketing purposes, mitigation of bias and avoidance of unfair discrimination is a requirement adhered to by all areas involved with development, deployment and governance of the AI model in close collaboration with the compliance and law areas.
- (Company) has implemented an AI governance and risk management framework which includes a cross functional working group of representatives from law, risk, model governance, business, and data analytics. The group reviews all AI models for compliance with NAIC AI principles and with relevant regulations and laws. Additionally, all AI / ML models are subject to validation testing and continuous monitoring. (Company) is committed to adhering to and complying with all applicable laws, rules and regulations governing the prevention of intentional unfair discrimination, including without limitation, Unfair Trade Practices laws. This commitment extends to our evolving use of new data sources and/or artificial intelligence to enhance traditional insurance practices. We strive to ensure that all similarly situated individuals are treated fairly and equitably and are not subject to bias, whether intentional or unintentional.
- [Company] has implemented an AI governance and risk management framework which includes a cross functional working group of representatives from law, risk, model governance, business, and data analytics. The group reviews all AI models for compliance with [Company] AI principles and with relevant regulations and laws. Additionally, all AI / ML models are subject to validation testing and continuous monitoring. The company is committed to adhering to and complying with all applicable laws, rules and regulations governing the prevention of intentional unfair discrimination, including without limitation, Unfair Trade Practices laws. This commitment extends to our evolving use of new data sources and/or artificial intelligence to enhance traditional insurance practices. We strive to ensure that all similarly situated individuals are treated fairly and equitably and are not subject to bias, whether intentional or unintentional.
- [Company] ensures its models comply with applicable laws by monitoring changes in the law, working with counsel, and staying abreast of the latest developments in this space.
- [Company] has policies for use around data deployment, data governance and risk management to avoid unfair discrimination.
- Legal, Compliance and Risk Management functions are included in business development activities. Regulatory Change Management procedure is in place and all business functions are responsible for compliance with the procedure

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- Legal, Compliance, Office of Analytics, and Risk Management work in close collaboration with business partners to ensure compliance with laws including those related to unfair discrimination. Processes include formal review and testing of model results.
- Marketing experts work with legal to ensure that model inputs and variables are consistent with privacy laws and insurance laws prohibiting unfair discrimination.
- No unique practices regarding Marketing, but we would take the same approach detailed in Pricing and Underwriting to any future laws/regulations affecting Marketing models.
- Our legislative and regulatory compliance tracking process monitors laws and regulations related to unfair discrimination and implements such requirements as applicable.
- Our Model Risk Management Policy applies to all models, including AI/ML. This policy helps to ensure accountability for appropriate resourcing and knowledge to ensure compliance with laws. Model risk management is a shared responsibility of multiple stakeholders across the company. In line with the [Company] risk framework, the “lines of responsibility” structure has been implemented to clearly delineate and assign responsibilities between model owners (1st line), risk (2nd line), and internal audit (3rd line). Furthermore, the Data Policy requires ethical reviews, which track to the NAIC AI Principles, to highlight risks and recommend appropriate controls as applicable. The ethical reviews are conducted by compliance professionals in conjunction with the data science team.
- Policies and AI Steering Committee
- [Company]’s legal and compliance department are involved in the review and assessment of Data Algorithms and AI systems and provide legal and compliance advice to ensure that legal requirements are identified, and legal guidance is implemented.
- Regulatory compliance is tracked by our in-house legal department.
- Same as practices documented in the Pricing and Underwriting section.
- See response to 36.2 above for Pricing & Underwriting.
- See survey block 36, question 2
- The Company is committed to establishing and maintaining a governance framework that helps to ensure that use of AI/ML and future, similar technologies do not unintentionally result in unfair discrimination while remaining compliant with all applicable laws and regulations. The Company has in place a mature regulatory change management process which utilizes multiple sources of information to document, track and communicate new laws and regulations to the impacted business areas. The Company utilizes routine reporting and recurring meetings across control functions and business to review new legislative or regulatory requirements and to address implementation where required. Our marketing teams are recipients of law and rule changes through this process and are responsible for understanding current marketing rules and guidelines, as well as staying abreast of new and emerging laws and regulations and how they may impact their processes, including the use of any machine learning algorithms and of external consumer data. These teams receive guidance from appropriate control groups, who are also involved with review of proposed new third-party agreements for technologies, for compliance with applicable laws and regulations.
- The Company is committed to establishing and maintaining a governance framework that helps to ensure that use of AI/ML and future, similar technologies do not unintentionally result in unfair discrimination while remaining compliant with all applicable laws and regulations. The Company has in place a mature regulatory change management process which utilizes multiple



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sources of information to document, track and communicate new laws and regulations to the impacted business areas. The Company utilizes routine reporting and recurring meetings across control functions and business to review new legislative or regulatory requirements and to address implementation where required. Our marketing teams are recipients of law and rule changes through this process and are responsible for understanding current marketing rules and guidelines, as well as staying abreast of new and emerging laws and regulations and how they may impact their processes, including the use of any machine learning algorithms and of external consumer data. These teams receive guidance from appropriate control groups, who are also involved with review of proposed new third-party agreements for technologies, for compliance with applicable laws and regulations.

- The following processes are utilized in reviews of AI models as appropriate to ensure the potential for unfair discrimination is mitigated:
  - A cross-functional AI governance committee conducts an initial review of any proposed use of an AI model. The committee considers the AI model use case including whether an AI solution is appropriate and whether the AI model comports with the AI principles, and it includes product-line and privacy attorneys, compliance and risk representatives, data scientists, and technical subject matter experts.
  - Privacy attorneys and compliance representatives also conduct privacy impact assessments on sensitive data uses, including those that involve AI models, to ensure the use cases are in compliance with legal and internal policy requirements.
  - An AI explainability and interpretability review provides a final review of the AI model's use case, scope, and development prior to its deployment. The AI model's training data, consumed data, and outputs are reviewed against principles, policies, and best practices.
  - A committee of underwriters, product-line attorneys, privacy attorneys, and other subject matter experts meets to discuss legal requirements and other issues surrounding underwriting matters including laws and policies impacting AI model use.

All of these processes involve the business owners implementing the AI model throughout the reviews including the information gathering, feedback, and approval phases. Beyond the business owners, subject matter experts are engaged as necessary to provide additional information about AI models and the implementation

- The Law and Compliance Departments, on a regular and ongoing basis, examine the business environment, identifying changes in applicable laws, regulations and other events with the potential to significantly affect the operation of their business areas, including laws related to use of data algorithms and unfair discrimination. Compliance then notifies the impacted business areas of the relevant requirements and risks and collaborates with business partners to implement controls, processes and procedures required to comply with new or changing laws and regulations in a timely manner. This includes Law and Compliance collaborating with business partners to assess the risk of new or rebuilt data models primarily involving third party data, to identify potential risks of non-compliance due to unfair discrimination with analysis of the risks and risk mitigation recommendations.
- Through our Office of Governmental Affairs team, we make sure we are up to date on the latest laws and regulations at all levels of government concerning unfair discrimination in models. The parties involved in model development (e.g., model developers, business owners) regularly consult with the First Line Model Governance, Legal, and Compliance functions as well as

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outside counsel if necessary to ensure compliance with all applicable laws. In addition, our First Line Model Governance team has capabilities in unfair discrimination testing approaches and can help conduct testing when needed.

- We adhere to the practices required by our third-party platforms such as Google Ads/Facebook Ads with respect to appropriate resources & knowledge involved to ensure compliance with laws including those related to unfair discrimination in marketing.
- We comply with all laws related to unfair discrimination in marketing by adhering to all applicable laws and regs that are monitored by our legislative and regulatory monitoring system. Additionally, we have a marketing compliance department that reviews and approves all marketing materials.
- We developed an AI/ML advisory group, backed by a formal policy for AI/ML use and approval. This group has legal, compliance, InfoSec, IT, EA, and Data Analytics representation. This group reviews all AI/ML use cases.
- We have regular meetings with legal and compliance experts to ensure compliance with laws on unfair discrimination. We also plan to adopt [Company]'s upcoming best practices on Fair and Explainable AI.
- We maintain a legs/regs process for updating the business on any changes to the law and have a 2nd Line of Defense testing program to test for compliance with any applicable laws. Internal Audit also conducts testing for compliance.
- We may be dependent on LinkedIn if we pursue this target marketing use case with producers.
- We offer up-to-date privacy policies, online privacy policies, accessibility statements and terms of use for all of our digital marketing touchpoints.

### Risk Management

- All models are subject to our Model Governance program, which includes policies, procedures and standards designed to comply with applicable legal requirements. Models are subject to legal review in accordance with our Model Governance program.
- Designated Legal and Compliance POCs are provided to the Model Owner for Legal and Compliance engagement during the Model Development process.
- [Company] has policies for use around data deployment, data governance and risk management to avoid unfair discrimination.
- Legal, Compliance and Risk Management functions are included in business development activities. Regulatory Change Management procedure is in place and all business functions are responsible for compliance with the procedure
- Legal, Compliance, Office of Analytics, and Risk Management work in close collaboration with business partners to ensure compliance with laws including those related to unfair discrimination. Processes include formal review and testing of model results.
- [Company] does not currently have any use cases for artificial intelligence or machine learning in Risk Management. If [company] were to onboard any risk-management tool, [Company] would take a risk-based approach for testing for unfair discrimination consistent with Question 2 above. In preparation for AI/ML use cases emerging in the future, [company] is enhancing its processes to ensure early identification of AI model usage across the Company.
- No unique practices regarding Risk Management, but we would take the same approach detailed

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- Our legislative and regulatory compliance tracking process monitors laws and regulations related to unfair discrimination and implements such requirements as applicable.
- Our Model Risk Management Policy applies to all models, including AI/ML. This policy helps to ensure accountability for appropriate resourcing and knowledge to ensure compliance with laws. Model risk management is a shared responsibility of multiple stakeholders across the company. In line with the company's risk framework, the "lines" (This word was not discernible) structure has been implemented to clearly delineate and assign responsibilities between model owners (1st line), risk (2nd line), and internal audit (3rd line). Furthermore, the Data Policy requires ethical reviews, which track to the NAIC AI Principles, to highlight risks and recommend appropriate controls as applicable. The ethical reviews are conducted by compliance attorneys in conjunction with the data science team.
- Policies and AI Steering Committee
- (Company's) legal and compliance department are involved in the review and assessment of Data Algorithms and AI systems and provide legal and compliance advice to ensure that legal requirements are identified and legal guidance is implemented.
- Recent regulatory updates are reviewed and analyzed on a weekly basis through ACLI. (Company) also participates in industry trade groups to help monitor regulatory developments. (Company) also participates in various NAIC working groups (Big Data/Artificial Intelligence Working Group) as well as ACLI committees (such as the Algorithmic Accountability Working Group) to keep current in new laws related to unfair discrimination.
- The following processes are utilized in reviews of AI models as appropriate to ensure the potential for unfair discrimination is mitigated:
  - A cross-functional AI governance committee conducts an initial review of any proposed use of an AI model. The committee considers the AI model use case including whether an AI solution is appropriate and whether the AI model comports with the AI principles, and it includes product-line and privacy attorneys, compliance and risk representatives, data scientists, and technical subject matter experts.
  - Privacy attorneys and compliance representatives also conduct privacy impact assessments on sensitive data uses, including those that involve AI models, to ensure the use cases are in compliance with legal and internal policy requirements.
  - An AI explainability and interpretability review provides a final review of the AI model's use case, scope, and development prior to its deployment. The AI model's training data, consumed data, and outputs are reviewed against principles, policies, and best practices.
  - A committee of underwriters, product-line attorneys, privacy attorneys, and other subject matter experts meets to discuss legal requirements and other issues surrounding underwriting matters including laws and policies impacting AI model use.

All of these processes involve the business owners implementing the AI model throughout the reviews including the information gathering, feedback, and approval phases. Beyond the business owners, subject matter experts are engaged as necessary to provide additional information about AI models and the implementation.

- Through our Office of Governmental Affairs team, we make sure we are up to date on the latest laws and regulations at all levels of government concerning unfair discrimination in models. The parties involved in model development (e.g., model developers, business owners) regularly consult with the First Line Model Governance, Legal, and Compliance functions as well as

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outside counsel if necessary to ensure compliance with all applicable laws. In addition, our First Line Model Governance team has capabilities in unfair discrimination testing approaches and can help conduct testing when needed.

- Using only traditional underwriting information to build our models, in line with current underwriting guideline requirements. We review with Legal, Compliance and Risk prior to implementation of models.
- Using only traditional underwriting information to build our models, in line with current underwriting guidelines
- We comply with all laws related to unfair discrimination in risk management by adhering to all applicable laws and regs that are monitored by our legislative and regulatory monitoring system. Additionally, we have governance in the form of a risk and compliance committee that meets regularly.
- We developed an AI/ML advisory group, backed by a formal policy for AI/ML use and approval. This group has legal, compliance, InfoSec, IT, EA, and Data Analytics representation. This group reviews all AI/ML use cases.
- We have regular meetings with legal and compliance experts to ensure compliance with laws on unfair discrimination. We also plan to adopt [Company]'s upcoming best practices on Fair and Explainable AI.
- We maintain a legs/regs process for updating the business on any changes to the law and have a 2nd Line of Defense testing program to test for compliance with any applicable laws. Internal Audit also conducts testing for compliance.

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### E. Ensuring Transparency with Appropriate Disclosures Specific to Data Being Used and Method for Appeal and Recourse Related to Inaccurate Data

The companies were asked to respond to the following question with respect to (1) pricing and underwriting, (2) marketing, and (3) risk management:

- “Briefly describe your practices with respect to Ensure Transparency with Appropriate Disclosures Including Notice to Consumers Specific to Data Being Used and Methods for Appeal and Recourse Related to Inaccurate Data.”

The responses by operational area are provided below.

#### Pricing & Underwriting

- A submitted application must be authorized by an applicant to obtain consumer reporting information. An applicant can obtain a copy of the report at no charge by contacting the agency/agencies. An applicant has the right to dispute the accuracy or completeness of any information contained in the consumer report.
- All accelerated underwriting applicants are given a notice of privacy practices that states medical information sources used and advises applicants that they may contact us to correct errors.
- Applicants for life insurance coverage requiring evidence of insurability are provided notice regarding the use of prior claim, application and medical information previously obtained by the Company, as well as notice of information collected/requested from medical professionals and third-party data providers. Applicants are asked to provide their authorization for same. Applicants may request a copy of the information used to assess their coverage eligibility. Applicants for which coverage is denied are provided an adverse determination decision notice with instructions on requesting the information used in making the decision, the right to appeal and right to have information corrected. If FCRA data is collected, the applicants are provided specific notice on use of that data and how to request and dispute or challenge that information. In addition, The [Company’s] Privacy notices, which are posted on the company website and customer portals included with policy booklets and updated/distributed annually, provide customers with notice of how we collect, disclose, and protect Personal Information, which includes obtaining information from the applicants, their transactions with us and use of third-party data. We will also disclose the data elements collected on customers in accordance with applicable laws and regulations such as CPRA.
- Applicants sign an Authorization to Obtain and Disclose Information "HIPAA form" which describes the records and information the Company collects. We utilize the FCRA in any algorithm
- As part of the application process, the policy owner, proposed insured and writing agent each are required to sign an agreement and authorization for the Company to obtain and disclose Information. Such agreement and authorization outlines the entities that may provide information and types of information that may be provided to the Company in order for it to determine eligibility for insurance, benefits, and to verify information provided on the application. Consumers are provided with a method to contact the Company in the event they wish to withdraw this authorization. The Company’s applications also all include a Health Insurance Portability and Accountability Act Authorization (HIPAA) to obtain and

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disclose information. The Authorization outlines the health and insurance related entities, providers and information which may provide information for determining eligibility for insurance, underwriting of the application, determining eligibility for benefits, contestability of the policy and detecting fraud or abuse. The Company will notify the consumer directly via mail in the event of an adverse underwriting decision and, generally, inform the consumer of the information source contributing to the decision. In the event the consumer believes the Company obtained incorrect information from a third party, they may request the third party's details from the Company so that they may work with the data provider to correct any misstatements if applicable. Once corrected, the Company may be notified with a request for a new review of the application.

- As stated previously, legal and regulatory requirements involving AI are documented and managed in a manner such that employees designing and deploying AI systems are aware of and understand the requirements, including those pertaining to disclosures and appeals and other recourses available to consumers.
- At the policy application phase, individuals are provided with a privacy notice that covers how personal data is collected, used, disclosed in connection with issuing and administering insurance products ("insurance privacy notice"). The insurance privacy notice explains what personal data is collected; how it is used; parties it is shared with and why; how it is safeguarded and secured as well as explaining the rights policyholders have over their data. The insurance privacy notice explains that policyholders have the right to request access to their data; request that it be corrected or deleted; send us or a regulator a complaint.
- At the policy application phase, individuals are provided with a privacy notice that covers how personal data is collected, used, disclosed, etc. in connection with issuing and administering insurance products ("insurance privacy notice"). The insurance privacy notice explains what personal data is collected; how it is used; parties it is shared with and why; how it is safeguarded and secured as well as explaining the rights policyholders have over their data. The insurance privacy notice explains that policyholders have the right to request access to their data; request that it be corrected or deleted; send us or a regulator a complaint.
- Clients receive a notice with each application which includes information on how to appeal the decision and contact the vendor regarding any discrepancies.
- Consumer signs an authorization to access relevant FCRA compliant, medical data sources. Recourse includes outreach to our underwriting team.
- [Company] facilitates mandatory training, as needed, to educate employees on compliance topics and has a system for review, analysis, and disbursement of new laws.
- Customer privacy statements, disclosures and consent requirements are implemented
- [Company] sends a written notice to applicants explaining their rights regarding a decision on their application. These rights include getting the specific reasons and evidence for the decision; knowing the sources of the information used; and requesting to see, change, or remove any information about the applicant in [Company's] files. The notice also provides the name and contact details of any consumer reporting agency(ies) that (Company) used to support its decision.
- [Company] sends a written notice to applicants explaining their rights regarding a decision on their application. These rights include getting the specific reasons and evidence for the decision; knowing the sources of the information used; and requesting to see, change, or remove any information about the applicant in [Company's] files. The notice also provides the name and

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contact details of any consumer reporting agency(ies) that [Company] used to support its decision.

- [Company] is still in the process of formalizing its Ethical AI governance process. Currently, a cross-functional working group with experts from legal, compliance, privacy, model risk and data science review new uses of AI consistent with the NAIC Ethical AI Principles including transparency.
- [Company] provides its clients the statutorily required documents (e.g., the Fair Credit Reporting Act's Notice to Users of Consumer Reports) to be shared with consumers for the purpose of informing the consumer of their rights. [Company] also obligates its clients to ensure that individuals who experience adverse action as a result of information provided by [Company] are provided information to contact [Company] and obtain a copy of the consumer report provided by [Company] to its client. If, on receipt of the consumer report, the consumer identifies inaccurate data in the consumer report [Company] works directly with the consumer to correct the report. Once the report is corrected and consumer confirms the report is accurate, an updated version of the report is provided to [Company's] client along with a request to reconsider the consumer's application.
- [Company] provides Privacy Notices to consumers and customers in accordance with GLBA, Model 670, and HIPAA (where applicable). In addition, [Company] publishes its GLBA, HIPAA, CPRA, and Online privacy notices at ([https://www.\[company\].com/privacy-notices/](https://www.[company].com/privacy-notices/)) and [Company's] cookie management is deployed using a banner that also describes online collection of behavioral information. A link to the privacy notices is included in all online environments where information is being collected. Also, the long form of the Notice of Important Insurance Information Practices (Model 670) is made available upon request. The GLBA, HIPAA, and CPRA notices, which are published on the company website, include information about how to request access, correction, and deletion, as does the Notice of Important Insurance Information Practices [Company's] Adverse Action Notices also include information about how to request access, correction, and deletion as well as how to request additional information about the underwriting decision. With respect to medical records and information subject to FCRA, correction can be requested through the entity providing the information.
- Notices of data collection and use practices are provided in accordance with applicable laws. Customers are provided data rights including access, correction, amendment and/or deletion.
- Our legislative and regulatory compliance tracking process monitors laws and regulations related to required disclosures and notices to consumers and implements such requirements as applicable.
- Our privacy policy advises insurance applicants that they have the right to see personal information we have about them, as well as the right to ask us to correct, amend or delete information that they believe to be incorrect. In the event of an adverse underwriting decision, a notice is sent to the proposed insured, which advises them of the decision, the reason for the decision and the source of the information upon which the decision was based. The proposed insured is also advised of the method by which they can ask to correct, amend or delete information they believe to be incorrect at that time. If the source of information is a consumer report, the proposed insured is also provided with the source name and contact information should they wish to request a copy of the report. The applicable notices are drafted to comply



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with state Insurance Information Practices requirements as well as adverse action notification requirements pursuant to FCRA.

- Policies and AI Steering Committee
- (Company) is committed to putting its customers first and centering their perspective on everything that the Company does. This includes informing its customers in clear and concise language about:
  - (i) the nature of the data that [Company] may collect.
  - (ii) how the Company safeguards and protects customer information.
  - (iii) how the Company may collect, use, share, and retain that information; and
  - (iv) how customers access and manage their own data. The company informs its customers of the Company's privacy practices, including how customers may access and manage their own data, through several channels. [Company] provides customers with its privacy notices and redress information consistent with legal requirements.
- [Company] incorporates a disclosure within the application for life insurance.
- The application for life insurance includes appropriate disclosure including methods for appeal and recourse as part of the signed authorization to collect data.
- The Company has procedures in place as required by the Fair Credit Reporting Act for that data.
- The following processes are utilized in reviews of AI models as appropriate to ensure required notices are provided to consumers along with applicable information regarding recourse:
  - A cross-functional AI governance committee conducts an initial review of any proposed use of an AI model. The committee considers the AI model use case including whether an AI solution is appropriate and whether the AI model comports with the AI principles, and it includes product-line and privacy attorneys, compliance and risk representatives, data scientists, and technical subject matter experts.
  - Privacy attorneys and compliance representatives also conduct privacy impact assessments on sensitive data uses, including those that involve AI models, to ensure the use cases are in compliance with legal and internal policy requirements
  - A committee of underwriters, product-line attorneys, privacy attorneys, and other subject matter experts meets to discuss legal requirements and other issues surrounding underwriting matters including laws and policies impacting AI model use.
  - In addition to the standard adverse action appeal process, in the event of an adverse underwriting decision based on information processed by external models, the customer is notified of their right to review and correct, as applicable, information utilized by the models. All of these processes involve the business owners implementing the AI model throughout the reviews including the information gathering, feedback, and approval phases. Beyond the business owners, subject matter experts are engaged as necessary to provide additional information about AI models and the implementation.
- [Company] has privacy policies in place to ensure appropriate transparency with appropriate disclosures
- The life insurance application includes disclosures that specify the types of data collected, the sources of the data and the company's use of that data in connection with its determination of eligibility for insurance. Such disclosures also state that the applicant may obtain information about the nature and scope of the information collected by the company. If the conclusion of the underwriting process results in an adverse underwriting decision, the applicant receives



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notice that includes information on how to appeal the decision and/or correct any information that the applicant believes is inaccurate.

- The [Company] Privacy Promise makes consumers aware of the types of data that [Company] collects and the general ways in which we use that data.
- We developed an AI/ML advisory group, backed by a formal policy for AI/ML use and approval. This group has legal, compliance, InfoSec, IT, EA, and Data Analytics representation. This group reviews all AI/ML use cases.
- We have adopted practices which include providing privacy notices to consumers to inform them of our data practices as well as their consumer rights, including data correction. We obtain authorization for data used for underwriting purposes and, in the event of an adverse decision, we provide a response with instructions for contacting a third party that may have provided inaccurate data.
- We maintain a legs/regs process for updating the business on any changes to the law and have a 2nd Line of Defense testing program to test for compliance with any applicable laws. Internal Audit also conducts testing for compliance.
- We notify customers of the types, sources, and uses of data through our Notice of Information Practices and our adverse action letters.
- We provide consumers with disclosures as required by applicable federal (e.g., FCRA) and state laws and regulations, including the reason(s) for adverse underwriting decisions and the consumer's rights to review and, where appropriate, correct records associated with the consumer.
- We provide customers with our HIPAA and Privacy Notice disclosures as well as Terms of Use on our website which the customer must acknowledge and agree to. The customers have avenues to appeal as applicable.
- We provide notice as required by FCRA and MIB, Inc. at the time of the application.

### Marketing

- All appropriate disclosures are outlined within our Terms of Use and Privacy Policy.
- As indicated in our response to Survey Block 22, our current use of AI/ML in marketing is limited to the use of tools applicable to marketing communications to agents and/or Key Office Personnel within agencies. Recipients of our communications receive notice of our Privacy Policy, which describes data usage generally, who to contact for questions on data usage, and how to adjust marketing preferences.
- At least annually, the company's customers receive the company's GLB privacy notice, which includes disclosure of the information we may collect, the third parties to whom it may be disclosed and how it may be used to, among other things, market the company's products and services. Additionally for all consumers, the company's online Privacy and Security Center, which includes our GLB Privacy Notices, online Privacy Policy and state specific privacy notices, is available. Those notices include disclosure of the information we may collect, the third parties to whom it may be disclosed and how it may be used to, among other things, market the company's products and services to consumers. If the law requires a company's consent or gives the consumer the opportunity to opt out, the company adheres to those requirements prior to using the information. Additionally, all marketing communications a consumer may receive

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adhere to all applicable laws including options to unsubscribe or opt out of receiving further communications.

- At the policy application phase, individuals are provided with a privacy notice that covers how personal data is collected, used, disclosed in connection with issuing and administering insurance products ("insurance privacy notice"). The insurance privacy notice explains what personal data is collected; how it is used; parties it is shared with and why; how it is safeguarded and secured as well as explaining the rights policyholders have over their data. The insurance privacy notice explains that policyholders have the right to request access to their data; request that it be corrected or deleted; send us or a regulator a complaint.
- At the policy application phase, individuals are provided with a privacy notice that covers how personal data is collected, used, disclosed, etc. in connection with issuing and administering insurance products ("insurance privacy notice"). The insurance privacy notice explains what personal data is collected; how it is used; parties it is shared with and why; how it is safeguarded and secured as well as explaining the rights policyholders have over their data. The insurance privacy notice explains that policyholders have the right to request access to their data; request that it be corrected or deleted; send us or a regulator a complaint.
- Current disclosures and statements are listed on our Online Privacy Policy.
- Customer privacy statements, disclosures and consent requirements are implemented
- If applicable, we would provide consumers with disclosures in accordance with federal and state laws and regulations.
- [Company] is committed to complying with all applicable laws and regulations as it relates to any personal data used in marketing.
- [Company] is still in the process of formalizing its Ethical AI governance process. Currently, a cross-functional working group with experts from legal, compliance, privacy, model risk and data science review new uses of AI consistent with the NAIC Ethical AI Principles including transparency.
- Notices of data collection and use practices are provided in accordance with applicable laws. Customers are provided data rights including access, correction, amendment and/or deletion.
- Opt out language provided in Marketing and DNC/DNM measures in place. Third party platform - Possible Now in place to keep measures and balances in check for any inaccurate data to reach consumers.
- Our legislative and regulatory compliance tracking process monitors laws and regulations related to required disclosures and notices to consumers and implements such requirements as applicable.
- Process exists for consumers to opt-out.
- [Company] is committed to putting its customers first and centering their perspective on everything that the Company does. This includes informing its customers in clear and concise language about:
  - (ii) the nature of the data that [Company] may collect.
  - (ii) how the Company safeguards and protects customer information.
  - (iii) how the Company may collect, use, share, and retain that information; and
  - (iv) how customers access and manage their own data. The company informs its customers of the Company's privacy practices, including how customers may access and manage their own

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data, through several channels. [Company] provides customers with its privacy notices and redress information consistent with legal requirements

- If a request for correction or deletion of marketing information is made, [Company] will delete the consumer from its marketing databases and, to the extent the necessary information is available to us, will also unsubscribe the consumer from commercial emails and opt the consumer out of affiliate sharing for marketing purposes. All consumers are also given the opportunity to prevent collection of marketing cookies on the [company].com website.
- The following processes are utilized in reviews of AI models as appropriate to ensure required notices are provided to consumers along with applicable information regarding recourse:
  - A cross-functional AI governance committee conducts an initial review of any proposed use of an AI model. The committee considers the AI model use case including whether an AI solution is appropriate and whether the AI model comports with the AI principles, and it includes product-line and privacy attorneys, compliance and risk representatives, data scientists, and technical subject matter experts.
  - Privacy attorneys and compliance representatives also conduct privacy impact assessments on sensitive data uses, including those that involve AI models, to ensure the use cases are in compliance with legal and internal policy requirements.
  - A committee of underwriters, product-line attorneys, privacy attorneys, and other subject matter experts meets to discuss legal requirements and other issues surrounding underwriting matters including laws and policies impacting AI model use.
  - In addition to the standard adverse action appeal process, in the event of an adverse underwriting decision based on information processed by external models, the customer is notified of their right to review and correct, as applicable, information utilized by the models

All of these processes involve the business owners implementing the AI model throughout the reviews including the information gathering, feedback, and approval phases. Beyond the business owners, subject matter experts are engaged as necessary to provide additional information about AI models and the implementation.

- [Company]'s Privacy notices, which are posted on the company website and customer portals, included with policy booklets and updated/distributed annually, provide customers with notice of how we collect, disclose, and protect Personal Information, which includes obtaining information from the applicants, their transactions with us and use of third-party data. We will also disclose the data elements collected on customers in accordance with applicable laws and regulations such as CPRA.
- [Company] has privacy policies in place to ensure appropriate transparency with appropriate disclosures
- We adhere to the practices required by our third-party platforms such as Google Ads/Facebook Ads with respect to ensuring transparency and disclosures related to marketing.
- We developed an AI/ML advisory group, backed by a formal policy for AI/ML use and approval. This group has legal, compliance, InfoSec, IT, EA, and Data Analytics representation. This group reviews all AI/ML use cases.
- We have adopted practices which include providing privacy notices to consumers to inform them of our data practices as well as their consumer rights, including data correction. We obtain authorization for data used for underwriting purposes and, in the event of an adverse decision,

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we provide a response with instructions for contacting a third party that may have provided inaccurate data.

- We maintain a legs/regs process for updating the business on any changes to the law and have a 2nd Line of Defense testing program to test for compliance with any applicable laws. Internal Audit also conducts testing for compliance.

### Risk Management

- Applicants sign an Authorization to Obtain and Disclose Information "HIPAA form" which describes the records and information the Company collects. We utilize the FCRA in any algorithm
- Customer privacy statements, disclosures and consent requirements are implemented
- If applicable, we would provide consumers with disclosures in accordance with federal and state laws and regulations.
- [Company] does not currently have any use cases for artificial intelligence or machine learning in Risk Management. If [company) were to onboard any risk-management tool, [Company] would take a risk-based approach for reviewing such a tool. In preparation for AI/ML use cases emerging in the future, [company) is enhancing its processes to ensure early identification of AI model usage across the Company.
- Notices of data collection and use practices are provided in accordance with applicable laws. Customers are provided data rights including access, correction, amendment and/or deletion.
- Our legislative and regulatory compliance tracking process monitors laws and regulations related to required disclosures and notices to consumers and implements such requirements as applicable.
- Policies and AI Steering Committee
- [Company] is committed to putting its customers first and centering their perspective in everything that the Company does. This includes informing its customers in clear and concise language about: (i) the nature of the data that (Company] may collect; (ii) how the Company safeguards and protects customer information; (iii) how the Company may collect, use, share, and retain that information; and (iv) how customers access and manage their own data. The company informs its customers of the [Company's] privacy practices, including how customers may access and manage their own data, through several channels. The company provides customers with its privacy notices and redress information consistent with legal requirements.
- Same as practices documented in the Pricing and Underwriting section.
- (Company's) Privacy Notice is provided to consumers on an annual basis. Adverse Action letters are also provided to consumers when applicable.
- The following processes are utilized in reviews of AI models as appropriate to ensure required notices are provided to consumers along with applicable information regarding recourse:
  - A cross-functional AI governance committee conducts an initial review of any proposed use of an AI model. The committee considers the AI model use case including whether an AI solution is appropriate and whether the AI model comports with the AI principles, and it includes product-line and privacy attorneys, compliance and risk representatives, data scientists, and technical subject matter experts.

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- Privacy attorneys and compliance representatives also conduct privacy impact assessments on sensitive data uses, including those that involve AI models, to ensure the use cases are in compliance with legal and internal policy requirements
- A committee of underwriters, product-line attorneys, privacy attorneys, and other subject matter experts meets to discuss legal requirements and other issues surrounding underwriting matters including laws and policies impacting AI model use.
- In addition to the standard adverse action appeal process, in the event of an adverse underwriting decision based on information processed by external models, the customer is notified of their right to review and correct, as applicable, information utilized by the models

All of these processes involve the business owners implementing the AI model throughout the reviews including the information gathering, feedback, and approval phases. Beyond the business owners, subject matter experts are engaged as necessary to provide additional information about AI models and the implementation.

- The [Company] has privacy policies in place to ensure appropriate transparency with appropriate disclosures
- We developed an AI/ML advisory group, backed by a formal policy for AI/ML use and approval. This group has legal, compliance, InfoSec, IT, EA, and Data Analytics representation. This group reviews all AI/ML use cases.
- We have adopted practices which include providing privacy notices to consumers to inform them of our data practices as well as their consumer rights, including data correction. We obtain authorization for data used for underwriting purposes and, in the event of an adverse decision, we provide a response with instructions for contacting a third party that may have provided inaccurate data.
- We maintain a legs/regs process for updating the business on any changes to the law and have a 2nd Line of Defense testing program to test for compliance with any applicable laws. Internal Audit also conducts testing for compliance.

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### F. AI Systems are Secure, Safe and Robust including Decision Traceability and Security and Privacy Risk Protections

The companies were asked to respond to the following question with respect to (1) pricing and underwriting, (2) marketing, and (3) risk management:

- “Briefly describe your practices with respect to AI Systems are Secure, Safe and Robust including Decision Traceability and Security and Privacy Risk Protections.”

The responses by operational area are provided below.

#### Pricing & Underwriting

- All data and systems used for automated underwriting are within [Company] network, which is very secure. Input data along with the final underwriting rate class and other data elements are available within our systems.
- All internal information systems are subject to company information security and privacy program requirements, including user access management, audit logging and encryption among other controls.
- All new technologies, including AI Systems, are required to comply with applicable Information Handling and Security Policies, Standards and procedures and are reviewed through our Legal, Third-Party Risk Management, and Information Security governance processes to assess the risk and compliance of the specific capabilities and implementation parameters of these initiatives. Our review processes for AI Systems continue to evolve as these technologies evolve to assess decision-making processes.
- [Company] facilitates mandatory training including on data privacy and security, in addition [Company] also has formal data and security programs in place to educate employees on compliance topics, and has a system for review, analysis, and disbursement of new laws.
- Currently, security reviews are conducted on the locations where current AI systems are stored and privacy reviews are conducted on the storage of the AI systems as well as the AI systems themselves. Model governance is currently being built out to formally address these areas.
- [Company] has implemented an AI governance and risk management framework which includes a cross functional working group of representatives from law, risk, model governance, business, and data analytics. The group reviews all AI models for compliance with [Company’s] AI principles including review for security, privacy, robustness, accountability, fairness, etc. In addition, [Company] maintains a secure repository for all internal models to safeguard AI systems from security, safety and robustness risks, including traceability and privacy issues. The repository enables tracking and tracing the decision-making process. [Company] continuously improves its documentation process.
- In addition to standard Company DevOps practices, AI Model Implementation requires additional requirements in the character of ModelOps Best Practices. These include: - Documentation of the Model Training Pipeline -Data Management and Data Version Control - Experiment Tracking - Model Testing Documentation - Model Deployment Documentation In addition, our AI governance program leverages existing privacy and security guidelines for data

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use and individual rights. These guidelines include but are not limited to: - Ensuring that privacy, intended use, regulations / rules etc. are upheld when data is manipulated, gathered, processed and ultimately made available for business consumption. - Information about data use authorization and consent should be preserved at the level it was collected.

- Legal, Compliance, Office of Analytics, and Risk Management work in close collaboration with business partners to ensure compliance with laws and verify accuracy for AI systems. Processes include review and testing of model results, as well as formal Enterprise Model Risk, Information Risk and Privacy programs providing oversight and requirements.
- [Company] has existing enterprise processes to manage vendor, privacy, and information security risks. In addition, [Company] is in the process of formalizing its Ethical AI governance process. Currently, a cross-functional working group with experts from legal, compliance, privacy, model risk and data science review new uses of AI consistent with the NAIC Ethical AI Principles including safety, security, and robustness.
- [Company] mandates all security controls in accordance with ISO27001, Group Information Security Policy [parent company], [State], and other state regulations. In addition, [Company] follows compliance standards outlined by our Center for Internet Security as well as Microsoft best practices.
- Our AI model building and model prediction process is reproducible, robust, and internally reviewed before putting in production. We ensure a reasonable level of traceability with our data, processes and AI model decisions.
- Our Model Risk Management Policy applies to all models, including AI/ML. This policy helps to ensure accountability for appropriate resourcing and knowledge to ensure compliance with laws. Model risk management is a shared responsibility of multiple stakeholders across the company. In line with the company's risk framework, the "lines" (This word was not discernible) structure has been implemented to clearly delineate and assign responsibilities between model owners (1st line), risk (2nd line), and internal audit (3rd line). Furthermore, the Data Policy requires ethical reviews, which track to the NAIC AI Principles (including Security, Safety, and Robustness), to highlight risks and recommend appropriate controls as applicable. The ethical reviews are conducted by compliance attorneys in conjunction with the data science team.
- [Company] recognizes that as a designer and user of AI systems, it has a responsibility to ensure, inter alia, that the Company is a stakeholder in the ethical and moral implication of their use, misuse, and actions and that it can (and should) shape those implications. In [Company's] view, this requires, among other things, that human beings retain control over and responsibility for AI throughout the model development lifecycle. Several governance frameworks, standards, and guidelines provide the foundation for the trust and transparency that drive the Company's use of AI. These include the Company's own Principles of Ethical AI, Global Privacy program, Information Security program, Model and Operational Risk Management (including Third Party Risk Management and Data Analytics standards), Global Ethics Program, and Global Compliance program. [Company's] enterprise privacy policies and programs require the implementation of controls to identify and mitigate privacy risk, including with respect to Data Algorithms. Privacy Impact Assessments of AI systems processing personal information are completed to identify privacy risks and applicable controls. All AI systems developed by [Company] or used on the company platforms are required to be in compliance with [Company's] Information Security



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standards which are designed to protect company and customer data from intentional, or unintentional access or misuse.

- [Company's] Information Protection Program incorporates Information Risk and Cybersecurity, Privacy, Enterprise Risk Management, Data Governance, Model Governance, Compliance, and internal Audit. Together, these departments and functions are accountable for ensuring regulatory compliance as well as identifying and ensuring mitigation of risks relating to Information Protection, including within AI Systems. The security of AI systems is primarily addressed through the Security Engineering Assessment, which is completed before any new technology is implemented. AI Systems are also required to undergo a Privacy Impact Assessment before being enabled. Both of these processes are integral to ensuring AI Systems are secure, safe and robust. As discussed above, AI Systems are also subject to model governance assessments and processes.
- [Company's] vendors are subject to an information security review. After the new vendor security review assessment periodic reviews are conducted.
- The following processes are utilized in reviews of AI models as appropriate to ensure the model application is secure, safe, and robust:
  - A cross-functional AI governance committee conducts an initial review of any proposed use of an AI model. The committee considers the AI model use case including whether an AI solution is appropriate and whether the AI model comports with the AI principles, and it includes product-line and privacy attorneys, compliance and risk representatives, data scientists, and technical subject matter experts.
  - An evaluation of the AI model technical implementation is conducted at up to three separate points to ensure appropriate security controls are in place and technology standards are followed. -During the procurement process, contract terms are reviewed to ensure they are appropriate for any third party's AI model such as the need for provisions like the data protection addendum.
  - An architectural review is conducted of AI models that involve new applications and architecturally significant changes to applications. The review ensures technology solutions align with the future state architecture, principles, and directives. Solutions are also compared against the existing application inventory to evaluate potential redundancy for the capabilities provided.
  - Privacy attorneys and compliance representatives also conduct privacy impact assessments on sensitive data uses, including those that involve AI models, to ensure the use cases are in compliance with legal and internal policy requirements.
  - An information risk consultation assessment is conducted whenever there are changes in people, processes, or technology of solutions. The assessment evaluates the information risks introduced by the changes by evaluating the effects against the information protection framework.
  - An AI explainability and interpretability review provides a final review of the AI model's use case, scope, and development prior to its deployment. The AI model's training data, consumed data, and outputs are reviewed against principles, policies, and best practices. -Due diligence is conducted regarding any new relationship with a third-party providing goods or services. The assessment evaluates risk introduced by the



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relationship based on the services or goods, inherent risk, and data involved versus the third party's controls.

- A committee of underwriters, product-line attorneys, privacy attorneys, and other subject matter experts meets to discuss legal requirements and other issues surrounding underwriting matters including laws and policies impacting AI model use.

All of these processes involve the business owners implementing the AI model throughout the reviews including the information gathering, feedback, and approval phases. Beyond the business owners, subject matter experts are engaged as necessary to provide additional information about AI models and the implementation.

- [Company's] Model Risk Management practice, within Enterprise Risk Management, validates critical and important models across the company. Where appropriate, validations include steps that test the access to model files by appropriate users, i.e., logical access testing. [Company's] Information Protection unit (THIP) (This word was not discernible) has developed a comprehensive set of security polices and standards based on the NIST Cyber Security Framework, which are intended to comply with federal and state data security regulations and to protect information. In addition, Privacy Law has developed policies, standards and procedures for handling and storing data. [Company] has an Information Security Event Response Program in place. If an employee or vendor becomes aware of an actual or potential information security event, they must immediately report the event through our centralized process [Company's] Privacy Law unit will investigate, triage, and perform legal analysis as required. When appropriate, Privacy Law will assemble the Data Incident Response Team which will assess the situation, notify regulatory and law enforcement authorities as required, coordinate the containment and control of the situation, take any necessary corrective action(s), and notify our customers in accordance with applicable law and contracts. Our notifications to regulators are made in accordance with applicable legal requirements.
- The models we use have been vetted through our Vendor Management process with includes a review and approval of system architecture and InfoSec protections. We understand the inputs to the models we are using, and our models provide an explanation for the outcomes.
- [Company] has a systematic risk management approach to each phase of the AI system life cycle on a continuous basis to address risks related to AI systems, including privacy, digital security and unfair discrimination as defined by applicable laws and regulations.
- We can trace all of our underwriting decisions, including those made with the assistance of AI/ML models. Security/Privacy Risk is assessed during model implementation which includes an IT security review for all external vendors.
- We developed an AI/ML advisory group, backed by a formal policy for AI/ML use and approval. This group has legal, compliance, InfoSec, IT, EA, and Data Analytics representation. This group reviews all AI/ML use cases.
- We have established written policies and standards which govern our Information Systems Security Program and maintain the confidentiality, integrity, and/or availability of our information assets. These policies and standards are guided by security requirements specific to our operating environment, relevant laws and regulations, and information security best practices. The control requirements are aligned with internationally recognized industry standards for security such as ISO 27002, NIST-CSF and COBIT and offer a consistent way to associate capabilities, activities, and risks. We utilize a layered defense model, including baseline

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security controls, policies and standards to protect institutional data. Multiple layers of defense are utilized where personal data is stored. To ensure decision traceability, we capture the data for all model inputs and outputs from production models.

- We log all input and output data from the model, and it is operated in a secure and private cloud environment.
- We maintain a history of datasets and comprehensive documentation on high-risk AI solutions. The model development process includes an assessment of the guardrails put in place to affect the flow of data and potential gaps that affect data security and privacy.
- We maintain traceability for all decisions to correlate back to data sources and how those inputs influence the outcome of the model
- We retain detailed model outputs to assess the reasons that a case was rated in a particular way or a decision was taken. We also include contractual security and privacy risk protections in our agreements with third parties where appropriate. This may take the form of representations and warranties as to the effectiveness of the information security program to protect personal data. We require administrative, technical, and physical safeguards to ensure the security and confidentiality of personal data, protect against reasonably anticipated threats or hazards, protect against unauthorized access or use, and to comply with specific data security requirements. We also require that third parties collect, use, and disclose consumer information only to carry out the purpose for which it was disclosed, as authorized by any applicable authorization, and only in compliance with applicable privacy law and data security requirements.
- With respect to security and privacy for Risk Score: [Company] adheres to generally recognized information security standards. The Irix and Curv Systems are SOC 2 Type 2 and HITRUST certified. Servers are hosted in a SOC2, Type II certified data center which also meets the HIPAA compliant regulatory requirements. All client data is encrypted using industry standards while in transit and at rest. Systems require clients to authenticate with unique access credentials. With respect to decision traceability: [Company] is committed to providing our clients all the data they need from us to ensure decision traceability within their larger underwriting process.

### Marketing

- All internal information systems are subject to company information security and privacy program requirements, including user access management, audit logging and encryption among other controls.
- All new technologies, including AI Systems, are required to comply with applicable Information Handling and Security Policies, Standards and procedures and are reviewed through our Legal, Third-Party Risk Management, and Information Security governance processes to assess the risk and compliance of the specific capabilities and implementation parameters of these initiatives. Our review processes for AI Systems continue to evolve as these technologies evolve to assess decision-making processes.
- Appropriate security and access controls are in place.
- Controlled Continuous Integration/Continuous Deployment process to move code into secure production environment.

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- Currently, security reviews are conducted on the locations where current AI systems are stored and privacy reviews are conducted on the storage of the AI systems as well as the AI systems themselves. Model governance is currently being built out to formally address these areas.
- Decisions are made with human intervention and standard security privacy and risk protections are followed accordingly.
- [Company] has implemented an AI governance and risk management framework which includes a cross functional working group of representatives from law, risk, model governance, business, and data analytics. The group reviews all AI models for compliance with [Company's] AI principles including review for security, privacy, robustness, accountability, fairness, etc. In addition, [Company's] maintains a secure repository for all internal models to safeguard AI systems from security, safety and robustness risks, including traceability and privacy issues. The repository enables tracking and tracing the decision-making process. (Company) continuously improves its documentation process.
- Legal, Compliance, Office of Analytics, and Risk Management work in close collaboration with business partners to ensure compliance with laws and verify accuracy for AI systems. Processes include review and testing of model results, as well as formal Enterprise Model Risk, Information Risk and Privacy programs providing oversight and requirements.
- [Company] has existing enterprise processes to manage vendor, privacy, and information security risks. [Company] is still in the process of formalizing its Ethical AI governance process. Currently, a cross-functional working group with experts from legal, compliance, privacy, model risk and data science review new uses of AI consistent with the NAIC Ethical AI Principles including safety, security, and robustness.
- Our AI model building and model prediction process is reproducible, robust, and internally reviewed before putting in production. We ensure a reasonable level of traceability with our data, processes and AI model decisions.
- Our Model Risk Management Policy applies to all models, including AI/ML. This policy helps to ensure accountability for appropriate resourcing and knowledge to ensure compliance with laws. Model risk management is a shared responsibility of multiple stakeholders across the company. In line with the company's risk framework, the "lines" structure has been implemented to clearly delineate and assign responsibilities between model owners (1st line), risk (2nd line), and internal audit (3rd line). Furthermore, the Data Policy requires ethical reviews, which track to the NAIC AI Principles (including Security, Safety, and Robustness), to highlight risks and recommend appropriate controls as applicable. The ethical reviews are conducted by compliance attorneys in conjunction with the data science team.
- [Company] recognizes that as a designer and user of AI systems, it has a responsibility to ensure, inter alia, that the Company is a stakeholder in the ethical and moral implication of their use, misuse, and actions and that it can (and should) shape those implications. In [Company's] view, this requires, among other things, that human beings retain control over and responsibility for AI throughout the model development lifecycle. Several governance frameworks, standards, and guidelines provide the foundation for the trust and transparency that drive the [Company's] use of AI. These include the Company's own Principles of Ethical AI, Global Privacy program, Information Security program, Model and Operational Risk Management (including Third Party Risk Management and Data Analytics standards), Global Ethics Program, and Global Compliance

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program. [Company's] enterprise privacy policies and programs require the implementation of controls to identify and mitigate privacy risk, including with respect to Data Algorithms. Privacy Impact Assessments of AI systems processing personal information are completed to identify privacy risks and applicable controls. All AI systems developed by [Company] or used on the company platforms are required to be in compliance with [Company's] Information Security standards which are designed to protect company and customer data from intentional, or unintentional access or misuse.

- Same as practices documented in the Pricing and Underwriting section.
- Security and safety for AI Systems with our third-party platforms are managed by them (Ex: Google Ads/Facebook Ads). We are unable to influence their security other than vetting out that they maintain certain levels of security.
- systematic risk management approach to each phase of the AI system life cycle on a continuous basis to address risks related to AI systems, including privacy, digital security and unfair discrimination as defined by applicable laws and regulations.
- The company takes its cybersecurity responsibilities seriously and has a robust cybersecurity program that covers the enterprise as a whole including any AI models developed and used by the company. From a privacy risk perspective, AI models and the data used within those models are governed by the same privacy protections and policies in place for other consumer data used by the company. Specific to AI models, controls are in place with respect to access to data and AI models. AI models are hosted in a secure environment and there are audit logs in place ensuring traceability for all model decisions.
- The company's AI systems are currently using public records data and demographic data from government sources. Data is analyzed on a high level and not individual consumer level. AI systems are built so that the reasons for data outputs are transparent and recreatable.
- The following processes are utilized in reviews of AI models as appropriate to ensure the model application is secure, safe, and robust:
  - A cross-functional AI governance committee conducts an initial review of any proposed use of an AI model. The committee considers the AI model use case including whether an AI solution is appropriate and whether the AI model comports with the AI principles, and it includes product-line and privacy attorneys, compliance and risk representatives, data scientists, and technical subject matter experts.
  - An evaluation of the AI model technical implementation is conducted at up to three separate points to ensure appropriate security controls are in place and technology standards are followed. -During the procurement process, contract terms are reviewed to ensure they are appropriate for any third party's AI model such as the need for provisions like the data protection addendum.
  - An architectural review is conducted of AI models that involve new applications and architecturally significant changes to applications. The review ensures technology solutions align with the future state architecture, principles, and directives. Solutions are also compared against the existing application inventory to evaluate potential redundancy for the capabilities provided.
  - Privacy attorneys and compliance representatives also conduct privacy impact assessments on sensitive data uses, including those that involve AI models, to ensure the use cases are in compliance with legal and internal policy requirements.

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- An information risk consultation assessment is conducted whenever there are changes in people, processes, or technology of solutions. The assessment evaluates the information risks introduced by the changes by evaluating the effects against the information protection framework.
- An AI explainability and interpretability review provides a final review of the AI model's use case, scope, and development prior to its deployment. The AI model's training data, consumed data, and outputs are reviewed against principles, policies, and best practices.
- Due diligence is conducted regarding any new relationship with a third-party providing goods or services. The assessment evaluates risk introduced by the relationship based on the services or goods, inherent risk, and data involved versus the third party's controls.
- A committee of underwriters, product-line attorneys, privacy attorneys, and other subject matter experts meets to discuss legal requirements and other issues surrounding underwriting matters including laws and policies impacting AI model use.

All of these processes involve the business owners implementing the AI model throughout the reviews including the information gathering, feedback, and approval phases. Beyond the business owners, subject matter experts are engaged as necessary to provide additional information about AI models and the implementation.

- [Company's] Model Risk Management practice, within Enterprise Risk Management, validates critical and important models across the company. Where appropriate, validations include steps that test the access to model files by appropriate users, i.e., logical access testing. [Company's] Information Protection unit (THIP) (This word was not discernible) has developed a comprehensive set of security polices and standards based on the NIST Cyber Security Framework, which are intended to comply with federal and state data security regulations and to protect information. In addition, Privacy Law has developed policies, standards and procedures for handling and storing data. [Company] has an Information Security Event Response Program in place. If an employee or vendor becomes aware of an actual or potential information security event, they must immediately report the event through our centralized process. [Company's] Privacy Law unit will investigate, triage, and perform legal analysis as required. When appropriate, Privacy Law will assemble the Data Incident Response Team which will assess the situation, notify regulatory and law enforcement authorities as required, coordinate the containment and control of the situation, take any necessary corrective action(s), and notify our customers in accordance with applicable law and contracts. Our notifications to regulators are made in accordance with applicable legal requirements.
- We developed an AI/ML advisory group, backed by a formal policy for AI/ML use and approval. This group has legal, compliance, InfoSec, IT, EA, and Data Analytics representation. This group reviews all AI/ML use cases.
- We have established written policies and standards which govern our Information Systems Security Program and maintain the confidentiality, integrity, and/or availability of our information assets. These policies and standards are guided by security requirements specific to our operating environment, relevant laws and regulations, and information security best practices. The control requirements are aligned with internationally recognized industry standards for security such as ISO 27002, NIST-CSF and COBIT and offer a consistent way to

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associate capabilities, activities, and risks. We utilize a layered defense model, including baseline security controls, policies and standards to protect institutional data. Multiple layers of defense are utilized where personal data is stored. To ensure decision traceability, we capture the data for all model inputs and outputs from production models.

- We may be dependent on LinkedIn if we pursue this target marketing use case with producers.
- We're using GLIC Systems which are secure and safe. We have our own servers/cloud systems. We know the variables which are in our predictive models, and their impact on the model results. The internal and external data we use for the models have already been vetted through IT / InfoSec, etc.
- We're using W&SFG Systems which are secure and safe. We know the variables which are in our predictive models, and their impact on the model results. The internal and external data we use for the models have already been vetted through IT / InfoSec, etc.
- With respect to security and privacy for any PII used, [Company] adheres to generally recognized information security standards.

### Risk Management

- All internal information systems are subject to company information security and privacy program requirements, including user access management, audit logging and encryption among other controls.
- As with all internet traffic our DLP, Data Loss Prevention, control ensures that users do not input sensitive information into AI systems. This includes, but is not limited to SSN, Social Security Numbers, as well as other PII, Personally Identifiable Information.
- Legal, Compliance, Office of Analytics, and Risk Management work in close collaboration with business partners to ensure compliance with laws and verify accuracy for AI systems. Processes include review and testing of model results, as well as formal Enterprise Model Risk, Information Risk and Privacy programs providing oversight and requirements.
- [Company] does not currently have any use cases for artificial intelligence or machine learning in Risk Management. If [Company] were to onboard any risk-management tool, [company] would take a risk-based approach for testing for safety, security, and robustness consistent with Question 2 above.
- [Company] mandates all security controls in accordance with ISO27001, Group Information Security Policy [parent company], [State]DFS, and other state regulations. In addition, [Company] follows compliance standards outlined by our Center for Internet Security as well as Microsoft best practices.
- Our AI model building and model prediction process is reproducible, robust, and internally reviewed before putting in production. We ensure a reasonable level of traceability with our data, processes and AI model decisions.
- Our Model Risk Management Policy applies to all models, including AI/ML. This policy helps to ensure accountability for appropriate resourcing and knowledge to ensure compliance with laws. Model risk management is a shared responsibility of multiple stakeholders across the company. In line with the company's risk framework, the "lines" (This word was not discernible) structure has been implemented to clearly delineate and assign responsibilities between model owners (1st line), risk (2nd line), and internal audit (3rd line). Furthermore, the Data Policy requires ethical reviews, which track to the NAIC AI Principles (including Security,



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Safety, and Robustness), to highlight risks and recommend appropriate controls as applicable. The ethical reviews are conducted by compliance attorneys in conjunction with the data science team.

- [Company] recognizes that as a designer and user of AI systems, it has a responsibility to ensure, inter alia, that the Company is a stakeholder in the ethical and moral implication of their use, misuse, and actions and that it can (and should) shape those implications. In [Company's] view, this requires, among other things, that human beings retain control over and responsibility for AI throughout the model development lifecycle. Several governance frameworks, standards, and guidelines provide the foundation for the trust and transparency that drive the [Company's] use of AI. These include the Company's own Principles of Ethical AI, Global Privacy program, Information Security program, Model and Operational Risk Management (including Third Party Risk Management and Data Analytics standards), Global Ethics Program, and Global Compliance program. [Company's] enterprise privacy policies and programs require the implementation of controls to identify and mitigate privacy risk, including with respect to Data Algorithms. Privacy Impact Assessments of AI systems processing personal information are completed to identify privacy risks and applicable controls. All AI systems developed by [Company] or used on the company platforms are required to be in compliance with [Company's] Information Security standards which are designed to protect company and customer data from intentional, or unintentional access or misuse.
- systematic risk management approach to each phase of the AI system life cycle on a continuous basis to address risks related to AI systems, including privacy, digital security and unfair discrimination as defined by applicable laws and regulations.
- The following processes are utilized in reviews of AI models as appropriate to ensure the model application is secure, safe, and robust: -A cross-functional AI governance committee conducts an initial review of any proposed use of an AI model. The committee considers the AI model use case including whether an AI solution is appropriate and whether the AI model comports with the AI principles, and it includes product-line and privacy attorneys, compliance and risk representatives, data scientists, and technical subject matter experts. -An evaluation of the AI model technical implementation is conducted at up to three separate points to ensure appropriate security controls are in place and technology standards are followed. -During the procurement process, contract terms are reviewed to ensure they are appropriate for any third party's AI model such as the need for provisions like the data protection addendum. -An architectural review is conducted of AI models that involve new applications and architecturally significant changes to applications. The review ensures technology solutions align with the future state architecture, principles, and directives. Solutions are also compared against the existing application inventory to evaluate potential redundancy for the capabilities provided. - Privacy attorneys and compliance representatives also conduct privacy impact assessments on sensitive data uses, including those that involve AI models, to ensure the use cases are in compliance with legal and internal policy requirements. -An information risk consultation assessment is conducted whenever there are changes in people, processes, or technology of solutions. The assessment evaluates the information risks introduced by the changes by evaluating the effects against the information protection framework. -An AI explainability and interpretability review provides a final review of the AI model's use case, scope, and development prior to its deployment. The AI model's training data, consumed data, and outputs

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are reviewed against principles, policies, and best practices. -Due diligence is conducted regarding any new relationship with a third-party providing goods or services. The assessment evaluates risk introduced by the relationship based on the services or goods, inherent risk, and data involved versus the third party's controls. -A committee of underwriters, product-line attorneys, privacy attorneys, and other subject matter experts meets to discuss legal requirements and other issues surrounding underwriting matters including laws and policies impacting AI model use. All of these processes involve the business owners implementing the AI model throughout the reviews including the information gathering, feedback, and approval phases. Beyond the business owners, subject matter experts are engaged as necessary to provide additional information about AI models and the implementation.

- We developed an AI/ML advisory group, backed by a formal policy for AI/ML use and approval. This group has legal, compliance, InfoSec, IT, EA, and Data Analytics representation. This group reviews all AI/ML use cases.
- We have established written policies and standards which govern our Information Systems Security Program and maintain the confidentiality, integrity, and/or availability of our information assets. These policies and standards are guided by security requirements specific to our operating environment, relevant laws and regulations, and information security best practices. The control requirements are aligned with internationally recognized industry standards for security such as ISO 27002, NIST-CSF and COBIT and offer a consistent way to associate capabilities, activities, and risks. We utilize a layered defense model, including baseline security controls, policies and standards to protect institutional data. Multiple layers of defense are utilized where personal data is stored. To ensure decision traceability, we capture the data for all model inputs and outputs from production models.



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### G. Processes for Providing Consumers with Data Elements Used in Consumer Impact Models

The companies were asked to respond to the following question with respect to (1) pricing and underwriting, (2) marketing, and (3) risk management:

- “What is the process, if any, that your company has for providing consumers with the data elements used in consumer impact models?”

The responses by operational area are provided below.

#### Pricing & Underwriting

- Our adverse decision process provides consumers with information about the data involved in our decision and allows them the opportunity to inquire and appeal data inputs and decisions.
- We collect PII directly from the consumer. The consumer provides PII when during application for insurance, making a claim or asking us to perform a policy transaction. We ask for name, contact information, birth date and may need Social Security number. Depending on the coverage applied for, we may ask about past or present health status, financial assets or other identifying information.
- We collect PII from third parties if it is required to determine eligibility for coverage or to process a claim. We may get reports from MIB, LLC., a nonprofit insurance support organization that exchanges information with its members."
- AI is not used.
- At the policy application phase, individuals are provided with a privacy notice that covers how personal data is collected, used, disclosed in connection with issuing and administering insurance products ("insurance privacy notice"). The insurance privacy notice explains what personal data is collected; how it is used; parties it is shared with and why; how it is safeguarded and secured as well as explaining the rights policyholders have over their data. The insurance privacy notice explains that policyholders have the right to request access to their data; request that it be corrected or deleted; send us or a regulator a complaint.
- Authorization for release of Health-Related Information lists data elements that could be considered during the underwriting process but is not specific to the Life Simplified Declined process. [Company] discuss the different Underwriting types with the potential client, including Life Simplified Declined, as well as eligibility checks during the application process.
- Consumers are provided the contact information of the 3rd party that is used for consumer impact models
- FCRA Compliance
- For data products used directly in mortality risk assessment, the applicant may access the report directly from the vendor, under the auspices of the FCRA.
- [Company] sends a written notice to applicants explaining their rights regarding the decision on their application. These rights include getting the specific reasons and evidence for the decision; knowing the sources of the information used; and requesting to see, change, or remove any information about the applicant in [Company's] files. The notice also provides the name and contact details of any consumer reporting agency(ies) that (COMPANY) used to support its decision.

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- [Company] sends a written notice to applicants explaining their rights regarding the decision on their application. These rights include getting the specific reasons and evidence for the decision; knowing the sources of the information used; and requesting to see, change, or remove any information about the applicant in [Company's] files. The notice also provides the name and contact details of any consumer reporting agency(ies) that [Company] used to support its decision.
- In accordance with FCRA rules, a consumer may request a copy of their report from our vendors.
- In the event of an adverse underwriting decision, consumers are provided with the information on which that underwriting decision was based. The Company does not otherwise have a process to provide consumers with general information about the data elements to be used in our models.
- In the event of an adverse underwriting decision, consumers are provided with the information on which that underwriting decision was based. The Company does not otherwise have a process to provide consumers with general information about the data elements used in our models.
- [Company] ensures its models comply with applicable laws by monitoring changes in the law, working with counsel, and staying abreast of the latest developments in this space. If consumer disclosure is required, then [Company] would disclose such in consumer impact models.
- [Company] ensures its underwriting models comply with applicable laws by monitoring changes in the in the law, working with counsel, and staying abreast of the latest developments in this space. If consumer disclosure is required, then [Company] would disclose such in consumer impact models."
- [Company's] privacy notice informs consumers of the information (Company) uses to price and underwrite its products. In addition, in the event of an adverse underwriting decision, consumers are provided a rationale for the decision, including the source of data obtained that led to such a decision.
- [Company] informs its customers in clear and concise language about: (i) the nature of the data that (Company) may collect; (ii) how the Company safeguards and protects customer information; (iii) how the Company may collect, use, share, and retain that information; and (iv) how they customers access and manage their own data. [Company] informs its customers of the Company's privacy practices, including how customers may access and manage their own data, through several channels. [Company] provides customers with its privacy notices and redress information consistent with legal requirements.
- State regulated guidance FCRA
- The application informs applicants that data may be collected from third parties including MIB, consumer reporting agencies, medical providers, and others. Applicants are told that they have a right of access to this data and may contact us for this information.
- The Company does not currently utilize any consumer impact models.
- The customer authorizes the use of all third-party medical data.
- The data elements used are described in the application process through an agreement and authorization to obtain and disclose information and HIPAA.
- The [Company]'s Privacy notice, which is posted on the company website, included with policy booklets and updated/distributed annually, provides customers with notice of how we collect,

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disclose, and protect Personal Information, which includes obtaining information from the applicants, their transactions with us and use of third-party data .

- The insurance privacy notice provides a summary of the PII collected.
- The life insurance application completed by the applicant includes disclosure of the sources used to collect data and information about the applicant for the purpose of determining eligibility for insurance. The application disclosure also states the applicant may obtain information about the nature and scope of the information collected by the company.
- Upon receipt of consumer requests, the relevant business unit consults with our legal department to ensure we comply with all relevant laws and regulations.
- We disclose what data may be obtained in the application process
- We do not have a process specific to providing consumers with the data elements used in models but do provide and publish privacy notices, respond to access requests from all consumers, and respond to requests for additional information about underwriting decisions following an Adverse Action.
- We don't have any AI/ML applications that have a consumer impact.
- We inform the customer of and gain their consent to obtain the types of information we will use in underwriting process. If an adverse underwriting decision is made, we inform the customer of the decision and the specific pieces of underwriting information that factored in to the adverse decision.
- We maintain a legs/regs process for updating the business on any changes to the law and have a 2nd Line of Defense testing program to test for compliance with any applicable laws. Internal Audit also conducts testing for compliance.
- We only use application responses and Milliman IntelliScript data as inputs to our underwriting models. For the Milliman IntelliScript data, an applicant has the option to dispute the accuracy or completeness of any information contained in the report.
- We provide consumers with disclosures as required by applicable federal (e.g., FCRA) and state laws and regulations, including the reason(s) for adverse underwriting decisions and the consumer's rights to review and, where appropriate, correct records associated with the consumer.
- We provide consumers with Privacy disclosures
- We provide disclosures to consumers when data is collected and the purpose of the collection.
- We provide notice about types, sources, and uses of underwriting data in our Notice of Information Practices and our adverse action letters. This covers the data elements used in AI/ML models.
- We would name components that drive results.
- Notice provided with each application.

### Marketing

- We collect PII directly from the consumer. The consumer provides PII when during application for insurance, making a claim or asking us to perform a policy transaction. We ask for name, contact information, birth date and may need Social Security number. Depending on the coverage applied for, we may ask about past or present health status, financial assets or other identifying information.

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- We collect PII from third parties if it is required to determine eligibility for coverage or to process a claim. We may get reports from MIB, LLC., a nonprofit insurance support organization that exchanges information with its members."
- At least annually, the company's customers receive the company's GLB privacy notice, which includes disclosure of the information we may collect, the third parties to whom it may be disclosed and how it may be used to, among other things, market the company's products and services. Additionally for all consumers, the company's online Privacy and Security Center, which includes our GLB Privacy Notices, online Privacy Policy and state specific privacy notices, is available. Those notices include disclosure of the information we may collect, the third parties to whom it may be disclosed and how it may be used to, among other things, market the company's products and services to consumers.
- If the law requires a consumer's consent or gives the consumer the opportunity to opt out, the company adheres to those requirements prior to using the information. Additionally, all marketing communications a consumer may receive adhere to all applicable laws including options to unsubscribe or opt out of receiving further communications."
- At the policy application phase, individuals are provided with a privacy notice that covers how personal data is collected, used, disclosed in connection with issuing and administering insurance products ("insurance privacy notice"). The insurance privacy notice explains what personal data is collected; how it is used; parties it is shared with and why; how it is safeguarded and secured as well as explaining the rights policyholders have over their data. The insurance privacy notice explains that policyholders have the right to request access to their data; request that it be corrected or deleted; send us or a regulator a complaint.
- If applicable, we would provide consumers with disclosures in accordance with federal and state laws and regulations.
- In accordance with FCRA rules, a consumer may request a copy of their report from our vendors.
- In order to use Google Ads / Facebook Ads the advertiser (COMPANY) has to verify their business as well as ensure that a policy is available on their website that pertains to tracking users. Disclosures are listed in Privacy Policy: [https://www.\[company\].com/privacy-policy](https://www.[company].com/privacy-policy)
- [Company] ensures its marketing models comply with applicable laws by monitoring changes in the law, working with counsel, and staying abreast of the latest developments in this space. If consumer disclosure is required, then [Company] would disclose such in consumer impact models.
- [Company] ensures its models comply with applicable laws by monitoring changes in the law, working with counsel, and staying abreast of the latest developments in this space. If consumer disclosure is required, then [Company] would disclose such in consumer impact models.
- If we proceed this solution will be producer facing, not consumer facing."
- Online Privacy Policy. Opt-out opportunities in Web and CRM  
[Company] informs its customers in clear and concise language about: (i) the nature of the data that [Company] may collect; (ii) how the Company safeguards and protects customer information; (iii) how the Company may collect, use, share, and retain that information; and (iv) how they customers access and manage their own data. [Company] informs its customers of the Company's privacy practices, including how customers may access and manage their own data, through several channels. [Company] provides customers with its privacy notices and redress information consistent with legal requirements.

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- Recipients of our communications receive notice of our Privacy Policy, which describes data that may be utilized and how to contact the Company regarding questions on data usage
- Recipients of our communications receive notice of our Privacy Policy, which describes data that may be utilized and how to contact the Company regarding questions on data usage.
- The Company does not currently utilize any consumer impact models.
- The Company provides consumers with information in a consumer facing policy that explains the personal information we collect, share and use.
- The [Company's] Privacy notice, which is posted on the company website, included with policy booklets and updated/distributed annually, provides customers with notice of how we collect, disclose, and protect Personal Information, which includes obtaining information from the applicants, their transactions with us and use of third-party data.
- The insurance privacy notice provides a summary of the PII collected.
- The [Company] Privacy Promise makes consumers aware of the types of data that [Company] collects and the general ways in which we use that data.
- Upon receipt of consumer requests, the relevant business unit consults with our legal department to ensure we comply with all relevant laws and regulations.
- We do not currently have a process for this in the manner in which we are using AI.
- We Follow the same process as laid out in our Privacy Policy
- We have a CA privacy rights act consume rights request process
- We inform the customer of and gain their consent to obtain the types of information we will use in underwriting process. If an adverse underwriting decision is made, we inform the customer of the decision and the specific pieces of underwriting information that factored into the adverse decision.
- We maintain a legs/regs process for updating the business on any changes to the law and have a 2nd Line of Defense testing program to test for compliance with any applicable laws. Internal Audit also conducts testing for compliance.
- We provide consumers with Privacy disclosures
- We provide disclosures to consumers when data is collected and the purpose of the collection.
- [Company] complies with existing laws and regulations regarding targeted advertising. [Company] further relies on model governance by its vendor and is currently reviewing its own governance practices consistent with applicable law.

### Risk Management

- If applicable, we would provide consumers with disclosures in accordance with federal and state laws and regulations.
- [Company] informs its customers in clear and concise language about: (i) the nature of the data that [Company] may collect; (ii) how the Company safeguards and protects customer information; (iii) how the Company may collect, use, share, and retain that information; and (iv) how they customers access and manage their own data. [Company] informs its customers of the Company's privacy practices, including how customers may access and manage their own data, through several channels. [Company] provides customers with its privacy notices and redress information consistent with legal requirements.
- The Company does not currently utilize any consumer impact models.

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- The [Company] Privacy Promise makes consumers aware of the types of data that [Company] collects and the general ways in which we use that data.
- Upon receipt of consumer requests, the relevant business unit consults with our legal department to ensure we comply with all relevant laws and regulations.
- We inform the customer of and gain their consent to obtain the types of information we will use in underwriting process. If an adverse underwriting decision is made, we inform the customer of the decision and the specific pieces of underwriting information that factored into the adverse decision.
- We maintain a legs/regs process for updating the business on any changes to the law and have a 2nd Line of Defense testing program to test for compliance with any applicable laws. Internal Audit also conducts testing for compliance.
- We provide disclosures to consumers when data is collected and the purpose of the collection.
- We would name components that drive results.

### H. Practices for Ensuring Compliance with Regulatory Frameworks in the Application of Non-FCRA Data

The companies were asked to respond to the following question with respect to (1) pricing and underwriting, (2) marketing, and (3) risk management:

- “What do you do to ensure compliance with regulatory frameworks, such as Model 880 and the Unfair Trade Practices Act, when using non-FCRA data?”

The responses by operational area are provided below.

#### Pricing & Underwriting

- Audits
- Company policies and procedures are designed to comply with applicable data privacy laws and include as necessary review of data use by legal counsel.
- Company Privacy Policy
- Compliance Training for employees and [Company] representatives
- Existing compliance procedures are applied to the uses of AI including Model 880 and the UTPA.
- Follow rules of Unfair Trade Practices
- For data that is not subject to FCRA we provide consumers with disclosures as required by applicable federal and state laws and regulations, including the reason(s) for adverse underwriting decisions and the consumer’s rights to review and, where appropriate, correct records associated with the consumer.
- [Company] ensures its models comply with applicable laws by monitoring changes in the law, working with counsel, and staying abreast of the latest developments in this space.
- [Company] ensures its models comply with applicable laws by monitoring changes in the law, working with counsel, and staying abreast of the latest developments in this space."
- Legal and Compliance review/engagement is included in the Model Development process.
- Manual Procedures
- Models in this space are currently being explored.

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- Non-FCRA data products may be used to determine which FCRA data products are utilized during underwriting but are not used to make UW decisions directly.
- Notice provided with each application.
- Our AI/ML Advisory group reviews and approves all AI use cases. This team has representation from our Compliance and Legal departments, who will consider these for each AI/ML use case.
- Our developing control framework contemplates front-end reviews and challenges of new data elements, as well as back-end testing and model validation. The Company engages a third-party data analytics consultant to conduct disparate impact analysis.
- Risk Assessments, Compliance Monitoring, Quality Reviews, Legal Guidance
- Robust compliance program tracks and implements applicable laws and regulations.
- [Company] complies with insurance and privacy regulations.
- The {Company} uses Guiding Principles for the Underwriter; MIB used as an alert and any impairments are in a coded format to protect privacy; Random audits conducted on a monthly basis along with external audits; Follows AHOU guidelines; and Underwriting is prohibited from rescinding or terminating any inforce policy with specific review and approval from the Legal Department.
- The Law and Compliance Departments, on a regular and ongoing basis, examine the business environment, identifying changes in applicable laws, regulations and other events with the potential to significantly affect the operation of their business areas, including laws related to use of data algorithms and unfair discrimination. Compliance then notifies the impacted business areas of the relevant requirements and risks and collaborates with business partners to implement controls, processes and procedures required to comply with new or changing laws and regulations in a timely manner
- The use of any new data element in life pricing and underwriting, whether covered by FCRA or not, is subject to review by [company]'s legal department for compliance with all applicable laws and regulations.
- [Company] does not use any non-FCRA data as inputs to underwriting models.
- Upon receipt of consumer requests, the relevant business unit consults with our legal department to ensure we comply with all relevant laws and regulations.
- We are collecting metadata about our data to help meet our compliance obligations.
- We do not make false statements about our products/other insurers, charge different rates for individuals within the same rate class, or offer rebates.
- We do not take adverse actions based on non-FCRA data from third party sources.
- We limit access to our buildings and our information systems to authorized persons. We have policies, procedures and training designed to keep PII safe and secure. We use privacy and security safeguards that meet state and federal regulations. If the laws differ, then we will follow the stricter applicable law.
- We maintain a legs/regs process for updating the business on any changes to the law and have a 2nd Line of Defense testing program to test for compliance with any applicable laws. Internal Audit also conducts testing for compliance.
- We only use FCRA-compliant data in pricing & underwriting.
- We provide all required disclosures
- We would rely on the Model Risk Management framework in place and AI governance practices described above, particularly in the Compliance and Unintended Impacts sections.



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- When using a data element to factor in to underwriting decisions, we make sure the data element has protective value and can properly assist in differentiation of mortality expectation of a customer. This is true of both FCRA and non-FCRA data. We do this in many ways, including, but not limited to guidance from reinsurer underwriting manuals, seeking reinsurer expertise, following industry practices, population-based studies, insured-lives studies, and direct testing on our block of business.
- While avoiding using non-FCRA data, our desk procedures are appropriately designed to ensure our underwriting process complies with regulatory frameworks currently in place.

### Marketing

- AI is not empowered with making any decisions and human decision makers are subject to the company's compliance guidelines.
- All compliance activities of the organization are overseen by the SVP, Chief Legal Officer. Processes (controls) throughout the business are designed and carried out to meet compliance standards and manage compliance risk. These processes are regularly analyzed and updated as the compliance and business environment changes. All advertising materials, regardless of media type, must adhere to advertising compliance standards prior to dissemination within the marketplace. The advertising standards are communicated annually to all relevant employees.
- Company policies and procedures are designed to comply with applicable data privacy laws, and include as necessary review of data use by legal counsel.
- Data elements used in marketing models are reviewed with legal before the models are used in production.
- Do not use such data within AI/ML as defined by this survey. (Company) further relies on model governance by its vendor and is currently reviewing its own governance practices consistent with applicable law.
- Existing compliance procedures are applied to the uses of AI including Model 880 and the UTPA.
- Follow rules of Unfair Trade Practices defined. All advertising is submitted through a review process to ensure compliance with:
  - all federal and state regulations and model law
  - brand guidelines
  - product features and coverage
- Follow rules of Unfair Trade Practices defined. All advertising is submitted through a review process to ensure compliance with:
  - all federal and state regulations and model law
  - brand guidelines, product features and coverage details
  - required disclosures/disclaimers are included Data used in audience targeting are selected based on customer profiles built from the existing customer base demographics/attributes and in adherence with product eligibility
- For data that is not subject to FCRA, if applicable we would provide consumers with disclosures as required by applicable federal and state laws and regulations.
- If we proceed, solution will be producer facing, not consumer facing.
- In order to use Google Ads / Facebook Ads the advertiser (company) has to verify their business as well as ensure that a policy is available on their website that pertains to tracking users. Disclosures are listed in Privacy Policy: [https://www.\[company\]/privacy-policy](https://www.[company]/privacy-policy)



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- [Company] ensures its models comply with applicable laws by monitoring changes in the law, working with counsel, and staying abreast of the latest developments in this space.
- Legal and Compliance review/engagement is included in the Model Development process.  
Manual Procedures
- No consumer data is used for life marketing purposes for in-scope entities and models. As such, no further processes or compliance frameworks are necessary beyond an initial assessment.
- Our AI models are not currently part of a decision-making process, so we don't believe this applies in that context.
- Our AI/ML Advisory group reviews and approves all AI use cases. This team has representation from our Compliance and Legal departments, who will consider these for each AI/ML use case.
- Partner with internal associates to identify and remediate/position.
- Risk Assessments, Compliance Monitoring, Quality Reviews, Legal Guidance
- Robust compliance program tracks and implements applicable laws and regulations.
- [Company] complies with insurance and privacy regulations.
- The Law and Compliance Departments, on a regular and ongoing basis, examine the business environment, identifying changes in applicable laws, regulations and other events with the potential to significantly affect the operation of their business areas, including laws related to use of data algorithms and unfair discrimination. Compliance then notifies the impacted business areas of the relevant requirements and risks and collaborates with business partners to implement controls, processes and procedures required to comply with new or changing laws and regulations in a timely manner
- Upon receipt of consumer requests, the relevant business unit consults with our legal department to ensure we comply with all relevant laws and regulations.
- We are collecting metadata about our data to help meet our compliance obligations.
- We Follow the same process as laid out in our Privacy Policy
- We have a marketing compliance department which reviews all advertisements and marketing to ensure compliance with applicable laws and regulations
- We limit access to our buildings and our information systems to authorized persons. We have policies, procedures and training designed to keep PII safe and secure. We use privacy and security safeguards that meet state and federal regulations. If the laws differ, then we will follow the stricter applicable law.
- We maintain a legs/regs process for updating the business on any changes to the law and have a 2nd Line of Defense testing program to test for compliance with any applicable laws. Internal Audit also conducts testing for compliance.
- We provide all required disclosures
- We would rely on the Model Risk Management framework in place and AI governance practices described above, particularly in the Compliance and Unintended Impacts sections.
- When using a data element to factor in to underwriting decisions, we make sure the data element has protective value and can properly assist in differentiation of mortality expectation of a customer. This is true of both FCRA and non-FCRA data. We do this in many ways, including, but not limited to guidance from reinsurer underwriting manuals, seeking reinsurer expertise, following industry practices, population-based studies, insured-lives studies, and direct testing on our block of business.

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- Where non-FCRA data may be included in AI models used for marketing purposes, those AI models are subject to reviews by compliance and legal. Part of the review includes assessing the AI model's conformance applicable laws and regulatory frameworks such as Model 880 and the Unfair Trade Practices Act.

### Risk Management

- Company policies and procedures are designed to comply with applicable data privacy laws, and include as necessary review of data use by legal counsel.
- Existing compliance procedures are applied to the uses of AI including Model 880 and the UTPA.
- Follow rules of Unfair Trade Practices
- Follow Unfair Trade Practices
- For data that is not subject to FCRA, if applicable we would provide consumers with disclosures as required by applicable federal and state laws and regulations.
- Legal and Compliance review/engagement is included in the Model Development process.
- Manual Procedures
- Our AI/ML Advisory group reviews and approves all AI use cases. This team has representation from our Compliance and Legal departments, who will consider these for each AI/ML use case.
- Risk Assessments, Compliance Monitoring, Quality Reviews, Legal Guidance
- Robust compliance program tracks and implements applicable laws and regulations.
- (Company) complies with insurance and privacy regulations.
- Upon receipt of consumer requests, the relevant business unit consults with our legal department to ensure we comply with all relevant laws and regulations.
- We are collecting metadata about our data to help meet our compliance obligations.
- We maintain a legs/regs process for updating the business on any changes to the law and have a 2nd Line of Defense testing program to test for compliance with any applicable laws. Internal Audit also conducts testing for compliance.
- We provide all required disclosures
- We would rely on the Model Risk Management framework in place and AI governance practices described above, particularly in the Compliance and Unintended Impacts sections.
- When using a data element to factor in to underwriting decisions, we make sure the data element has protective value and can properly assist in differentiation of mortality expectation of a customer. This is true of both FCRA and non-FCRA data. We do this in many ways, including, but not limited to guidance from reinsurer underwriting manuals, seeking reinsurer expertise, following industry practices, population-based studies, insured-lives studies, and direct testing on our block of business.

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### I. Processes for making consumers aware of non-FCRA data collection, when used & how used

The companies were asked to respond to the following question with respect to (1) pricing and underwriting, (2) marketing, and (3) risk management:

- “Are the consumers made aware of what non-FCRA data is collected, when it is used, and how it is used? If Yes, then explain process.”

The responses by operational area are provided below.

#### Pricing & Underwriting

- Applicants agree to a HIPAA-compliant authorization at time of application that explains which types of consumer data will be released and when/how it is used by [Company].
- Consumers are made aware of the types of information that is collected and how it is used. This information is contained in the [Company] Privacy Promise.
- Consumers are provided legally required notices upon collection of non-FCRA data. These notices are available on a publicly available website.
- Disclosure provided at policy application.
- Disclosures regarding data collected and used in pricing and underwriting are made to consumers if required by applicable laws and regulations (may vary by state).
- For current Company models using external data (not provided by the consumers themselves) for underwriting and/or group-level pricing, consumers are made aware of the data collected and used through their consent in the application process, where applicable.
- Insureds are required to sign an inclusive authorization statement that gives consent to specific data collection points such as MIB Check, medical records, an exam, blood and urine specimens, and consumer reports such as background checks, credit checks, criminal history reports, an MVR and other specific reports. In addition, with respect to medical records, certain medical facilities require a HIPAA authorization to be signed by an insured in order for records to be released.
- [Company] operations and use of data for the preparation and delivery of consumer reports to our clients complies with the FCRA.
- [Company’s] Privacy Notices provide details on the collection and use of data: Our GLBA, HIPAA, CPRA, and Online Privacy Notices are published at [https://www.\[Company\].com/privacy-notices/](https://www.[Company].com/privacy-notices/). Our client website links to all of these notices and also includes Terms of Use. We also have a Notice of Important Insurance Information Practices in a long and short form. The short form is provided as part of the application and the long form is available upon request.
- Our process is to comply with all relevant privacy regulations at the federal and state level.
- [Company] incorporates a disclosure within the application for life insurance which outlines the collection of data.
- The Authorization for release of Health-Related Information signed by the applicant lists the types of records applicable under the authorization, as notice of the non-FCRA data used to facilitate the insurance transaction. The Customer Privacy Statement also provides information about the use of their data. This is in addition to the discussions held between the potential

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

client and the [Company] reviewing what non-FCRA data can be collected and reviewed during the life insurance process.

- The company does not use non-FCRA data or non-HIPAA data collected from third parties with pricing and underwriting functions so the disclosure of such data is not applicable.
- The information collected is described as part of the application process in an agreement and authorization to obtain and disclose information and HIPAA form.
- There are no current Company models using external data (not provided by the consumers themselves) for underwriting and/or group-level pricing. Our expectation is that as non-FCRA data components are added for this type of model use, we would consider our model risk management framework and AI governance in determining appropriate data usage and disclosures.
- Through the application authorization process
- Underwriters manually scored tens of thousands of applicants, model learned to replicate those scores using Milliman rule data.
- "We collect PII directly from the consumer. The consumer provides PII when during application for insurance, making a claim or asking us to perform a policy transaction. We ask for name, contact information, birth date and may need Social Security number. Depending on the coverage applied for, we may ask about past or present health status, financial assets or other identifying information.
- We collect PII from third parties if it is required to determine eligibility for coverage or to process a claim. We may get reports from MIB, LLC., a nonprofit insurance support organization that exchanges information with its members."
- "We collect PII directly from the consumer. The consumer provides PII when during application for insurance, making a claim or asking us to perform a policy transaction. We ask for name, contact information, birth date and may need Social Security number. Depending on the coverage applied for, we may ask about past or present health status, financial assets or other identifying information.
- We collect PII from third parties if it is required to determine eligibility for coverage or to process a claim. We may get reports from MIB, LLC., a nonprofit insurance support organization that exchanges information with its members. We obtain permission before we obtain from or provide information to MIB"
- We collect PII directly from the consumer. The consumer provides PII when during application for insurance, making a claim or asking us to perform a policy transaction. We ask for name, contact information, birth date and may need Social Security number. Depending on the coverage applied for, we may ask about past or present health status, financial assets or other identifying information.
- We collect PII from third parties if it is required to determine eligibility for coverage or to process a claim. We may get reports from MIB, LLC., a nonprofit insurance support organization that exchanges information with its members. We obtain permission before we obtain from or provide information to MIB.
- We do not sell new life policies in Louisiana or other states covered by this survey. We are only servicing a small book of life business in Louisiana.
- Overall, our underwriting process in non-survey related states varies by product. Underwriting process begins with the completion of an application through a licensed captive agent.

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Underwriting process may include paramed exams, review of medication records and medical records by an Underwriter depending on volume and type of product sold."

- We do not use AI. We provide the required disclosures as directed by each state.
- We generally provide this information to customers through our privacy notice.
- We inform the customer of and gain their consent to obtain the types of information we will use in underwriting process. If an adverse underwriting decision is made, we inform the customer of the decision and the specific pieces of underwriting information that factored into the decision.
- We provide a clear and conspicuous written notice describing our privacy policies and practices.
- We provide consumers with privacy notices as required by applicable federal and state laws and regulations. Our privacy notices describe our collection, use and disclosure of personal information, as well as any rights consumers have pursuant to applicable law.
- Where necessary and appropriate, [company]'s privacy notice informs consumers of the information that [company) uses to price and underwrite its products. In addition, in instances where applicant-specific, 3rd party information is needed for underwriting, applicants receive an authorization which provides additional details regarding the collection of information. Applicants sign the authorization to allow for data collection.
- Yes, with respect to underwriting for supplemental life coverage, applicants for life insurance coverage requiring evidence of insurability are provided notice regarding the use of prior claim, application and medical information previously obtained by the Company, as well as notice of information collected/requested from medical professionals and third-party data providers. If coverage is declined, applicants are provided an adverse determination decision notice with instructions on requesting the information used in making the decision, the right to appeal and right to have information corrected. In addition, the [Company's] Privacy notices, which are posted on the company website and customer portals included with policy booklets and updated/distributed annually, provide customers with notice of how we collect, disclose, and protect Personal Information, which includes obtaining information from the applicants, their transactions with us and use of third-party data. We will also disclose the data elements collected on customers in accordance with applicable laws and regulations such as CPRA.

### Marketing

- The [Company's] Privacy notices, which are posted on the company website and customer portals, included with policy booklets and updated/distributed annually, provide customers with notice of how we collect, disclose, and protect Personal Information, which includes obtaining information from the applicants, their transactions with us and use of third-party data. We will also disclose the data elements collected on customers in accordance with applicable laws and regulations such as CPRA.
- All compliance activities of the organization are overseen by the SVP, Chief Legal Officer. Processes (controls) throughout the business are designed and carried out to meet compliance standards and manage compliance risk. These processes are regularly analyzed and updated as the compliance and business environment changes. All advertising materials, regardless of media type, must adhere to advertising compliance standards prior to dissemination within the marketplace. The advertising standards are communicated annually to all relevant employees.
- Consumers are made aware of the types of information that is collected and how it is used. This information is contained in the [Company's] Privacy Promise.

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- Consumers are provided legally required notices upon collection of non-FCRA data. These notices are available on a publicly available website. For consumer data collected on public-facing websites, specific notices are available explaining what data is collected and how it is used.
- Disclosures regarding data collected and used in marketing are made to consumers if required by applicable laws and regulations (may vary by state).
- For current Company models using external data (not provided by the consumers themselves) for marketing, consumers are not impacted by the usage of the external data due to the model purpose (workflow, prioritization, and/or analysis). Our expectation is that as non-FCRA data components are added for this type of model use, we would consider our model risk management framework and AI governance in determining appropriate data usage and disclosures.
- For purposes of models in scope for this survey [company] is not using any customer-specific data. Outside of these models, where necessary and appropriate, [company's] privacy notice informs consumers of the information that [company] uses and purposes it uses that information for.
- If a disclosure is required by law or regulation, then [Company] will disclosure such use.
- Our process is to comply with all relevant privacy regulations at the federal and state level.
- There are no current Company models using external data (not provided by the consumers themselves) for marketing. Our expectation is that as non-FCRA data components are added for this type of model use, we would consider our model risk management framework and AI governance in determining appropriate data usage and disclosures.
- We collect PII directly from the consumer. The consumer provides PII when during application for insurance, making a claim or asking us to perform a policy transaction. We ask for name, contact information, birth date and may need Social Security number. Depending on the coverage applied for, we may ask about past or present health status, financial assets or other identifying information.
- We collect PII from third parties if it is required to determine eligibility for coverage or to process a claim. We may get reports from MIB, LLC., a nonprofit insurance support organization that exchanges information with its members. If permitted by law, we may also use PII to offer other insurance-related products and services."
- We collect PII from third parties if it is required to determine eligibility for coverage or to process a claim. We may get reports from MIB, LLC., a nonprofit insurance support organization that exchanges information with its members. We obtain permission before we obtain from or provide information to MIB. We may ask about your insurance coverage with other companies, including CNO Affiliates, such as coverage levels or payment history. We ask your permission to obtain this information, unless the law allows otherwise. If permitted by law, we may also use PII to offer other insurance-related products and services.
- We do not market life products in the states covered by this survey. We primarily market through our products in non-survey states through captive agents and through media such as TV, billboards, social media.
- We do not use AI. We provide the required disclosures as directed by each state.
- We Follow the same process as laid out in or Privacy Policy
- We generally provide this information to customers through our privacy notice.

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- We inform the customer of and gain their consent to obtain the types of information we will use in underwriting process. If an adverse underwriting decision is made, we inform the customer of the decision and the specific pieces of underwriting information that factored into the decision .We inform the customer of and gain their consent to obtain the types of information we will use in underwriting process. If an adverse underwriting decision is made, we inform the customer of the decision and the specific pieces of underwriting information that factored into the decision.
- We provide a clear and conspicuous written notice describing our privacy policies and practices.
- We provide consumers with privacy notices as required by applicable federal and state laws and regulations. Our privacy notices describe our collection, use and disclosure of personal information, as well as any rights consumers have pursuant to applicable law.
- Where non-FCRA data may be included in AI models used for marketing purposes, those AI models are subject to reviews by compliance and legal. Part of the review includes assessing the AI model's conformance applicable laws.

### Risk Management

- Disclosures regarding data collected and used in risk management are made to consumers if required by applicable laws and regulations (may vary by state).
- Our process is to comply with all relevant privacy regulations at the federal and state level.
- There are no current Company models using external data (not provided by the consumers themselves) for risk management. Our expectation is that as non-FCRA data components are added for this type of model use, we would consider our model risk management framework and AI governance in determining appropriate data usage and disclosures.
- There is no current or anticipated Risk Management AI/ML models use. If use cases emerge in the future, [company) will ensure that such practices are addressed in its privacy notice.
- We do not use AI. We provide the required disclosures as directed by each state.
- We have reinsurance contracts in place to manage concentration and volume risks within company risk appetite.
- We provide a clear and conspicuous written notice describing our privacy policies and practices.
- We provide consumers with privacy notices as required by applicable federal and state laws and regulations. Our privacy notices describe our collection, use and disclosure of personal information, as well as any rights consumers have pursuant to applicable law.



## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### J. How does human intelligence influence the decision making based on the AI/ML results? How much human intervention is involved?

The companies were asked to respond to the following question with respect to (1) pricing and underwriting, (2) marketing, and (3) risk management:

- “How does human intelligence influence the decision making based on the AI/ML results? How much human intervention is involved?”

The responses by operational area are provided below.

#### Pricing & Underwriting

- A human is in the loop for AI/ML decisions. Periodic reviews for accuracy and consistency of results is performed by processes owners and model testing is performed to verify accuracy of model output.
- AI models are one component of the underwriting process which also includes underwriting rules written with human oversight and includes a human in the loop whose involvement varies based on the risk profile of each application.
- AI/ML models are used to inform a decision or next step, or to predict an action or outcome. The majority of models used within [Company] have some degree of human intervention involved in interpreting output and determining the best action based on the model output. Output from the models is provided to a human reviewer through a report, dashboard, or similar method for the human to review the model output and to better enable the human to determine the next step, or to make a decision.
- In the case of high-risk or high-impact models with limited or no human intervention in the decision-making process the model governance policy outlines controls to help ensure the model is functioning in line with business intent and appropriate risk controls are in place. Risk controls of note include having named stakeholders assigned to defined roles with clear accountabilities for ownership and implementation of controls; robust processes of model testing and validation prior to the model’s release in the production environment; ongoing real-time monitoring for model performance including data drift and concept drift for all models in a production environment; and a holdout sample for further testing and validation of model performance.
- AI/ML models are used to issue some policies with no human intervention, but the more marginal cases are referred to an underwriter where they can review the full underwriting data and they get full autonomy to make the final determination.
- All applications are routed through our AI/ML models. Some applications receive an UW decision without human intervention and some, based on complexity of individual situation, are routed to a human UW in addition to routing through the AI/ML model.
- All final decisions are made by a human.
- All human
- All model results go through human scrutiny and rigorous testing of results



## Life Insurance Artificial Intelligence/Machine Learning Survey Results

- All underwriting decisions are currently reviewed by a human underwriter, no decisions are made automatically.
- Applications that meet the pre-defined criteria for straight-through processing can be automatically approved or denied without human intervention. Some applications are referred to an underwriter with suggested rate class but the underwriter has the option to override the suggested rate class.
- Assumption models are used to assess risk at the group case level (and not for individual participants). The final quoted price for the group business remains at the discretion of the business based on a number of factors. With respect to the individual underwriting (when required), the underwriting model adjudicates approvals or pushes a potential adverse underwriting decision to a human for review following underwriting standards.
- Case dependent, still evolving
- Cases that are not auto decisioned are routed to an underwriter with a recommendation.
- For current Company models with AI/ML components, there are varied amounts of human intervention depending on the model application. For more automated models, human intelligence may be involved only through review of trending, the appeals process, and/or setting or adjusting thresholds for automation. For models using AI/ML for augmentation and support, human intelligence is applied in all decision-making. In all applications, there are controls in place to provide for an appropriate level of oversight and model assessment.
- For our Risk class decisioning model, we currently have human experts review all risk class decisions assigned by the model. Where it is applicable, we may use our Risk class decisioning model in a fully automated way in the future. For our accelerated underwriting model, the decision on whether to require the Expanded Blood Draw is generally automated.
- human can override
- Human intelligence dominates underwriting decision making, where AI is currently only used as supporting information. Similarly in pricing, human actuarial judgment plays a major role in setting assumptions (see SOA's ASOP 56).
- Human intelligence influences the decision-making process by reviewing all policies not approved through the automated process. All potential denied applications are reviewed in their entirety by humans who make the final determination on whether or not to accept the policy.
- Human Intelligence is used to make evidence-based decisions. Human intervention is involved when assessing the risk to determine eligibility is required by the Underwriter. Such sources such as medical records or medical exams are reviewed by the Underwriter. Underwriting monitors results through Quality Control processes and audits. Once a model is built it remains static in production, changing only when launching a revised model. No prohibited, protected class data enters into the models. The only data used is an applicant's age, gender, and prescription history
- Human intervention is involved in the model build to screen inputs to the model and model performance. Humans can override any decision.
- Humans create the rules, pricing, and outcomes. There is a process for human intervention in which applications get routed to an underwriter for human review. The amount of intervention involved is proprietary.
- Humans involved in all solutions. Amount of human influence depends on the complexity of the problem.

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

- In our waiver of fluids model, the underwriter is advised of the decision to accelerate. The underwriter can overrule that decision based on underwriting rules and evidence obtained up to that point in the process. Our fluidless classification model is automatic (without any further human intervention) if the classification has been deemed standard or better. However, should additional investigation be needed, the underwriter can overrule that decision based on underwriting rules and evidence obtained up to that point in the process.
- MI/AL underwriting tools are combined with human reviewed underwriting tools and a human makes a final assessment.
- MI/AL underwriting tools may make an automated underwriting approval, but all non-approved outcomes are reviewed by a human prior to final decision.
- Models in this space are currently being explored.
- AI/ML recommendations are subject to human review to ensure that the recommendation is empirically derived and statistically sound.
- Pricing Decisions are made by end user. With our underwriting models, results are quality checked by a human. Humans also create guidelines based on mortality experience the model is designed to follow. Some results are flagged for human review.
- Pricing only uses ML models in the development of assumptions where humans review the output before setting the assumption.
- [Company] has different programs that range from less than 10% automation to 40%+ automation. Prior to a declination, each application is reviewed by a human underwriter.
- the AI/ML results provide directional guidance but it's up to the human to make decisions
- The (company) Life Triage Model and Group EOI Models can fast-track applications without human intervention. Applications that are not fast-tracked will follow the usual underwriting and human review process.
- The (company) Life Triage Model can fast-track applications without human intervention. Applications that are not fast-tracked will follow the usual underwriting and human review process.
- There are no current Company models with AI/ML components for pricing or underwriting, but we would expect future application of practices consistent with those described in the marketing response.
- There are no current Company models with AI/ML components for pricing or underwriting, but we would expect in the future varied amounts of human intervention depending on the model application. For more automated models, human intelligence may be involved only through review of trending, the appeals process, and/or setting or adjusting thresholds for automation. For models using AI/ML for augmentation and support, human intelligence would be applied in all decision-making. In all applications, there would be controls in place to provide for an appropriate level of oversight and model assessment.
- Underwriters review and score over 1000 cases a month and we review and recalibrate based on that information.
- We do not use AI/ML in this way.
- We have human underwriters involved in every application who review the results of the model and are responsible for ultimate decision-making.
- We work with our vendor to select appropriate thresholds for underwriting risk.
- We work with our vendor to select appropriate thresholds for underwriting risk

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### Marketing

- Automation and AI may be used on a first pass Human judgment is required for final decision.
- A human is in the loop for AI/ML decisions. Periodic reviews for accuracy and consistency of results is performed by processes owners and model testing is performed to verify accuracy of model output.
- AI system creates a rank order that then the human manually works through.
- All human
- All model results go through human scrutiny and rigorous testing of results
- All models augment human decision making. Except Facebook lookalike models, none of the models are in an AI/ML environment where actions and decisions are made independently via the model. Instead, the models are developed by humans, and augment human led decisions and actions.
- All models augment human decision making. None of the models are in an AI/ML environment where actions and decisions are made independently via the model. Instead, the models are developed by humans, and augment human led decisions and actions.
- All underwriting decisions are currently reviewed by a human underwriter, no decisions are made automatically.
- Consumers have the ability to bypass any AI/ML Decision making.
- For current Company models with AI/ML components, there are varied amounts of human intervention depending on the model application. For more automated models, human intelligence may be involved only through review of trending, the appeals process, and/or setting or adjusting thresholds for automation. For models using AI/ML for augmentation and support, human intelligence is applied in all decision-making. In all applications, there are controls in place to provide for an appropriate level of oversight and model assessment.
- Human Intelligence can influence the decision making by making manual adjustments to targeting, bids, budgets, ad scheduling, and creative.
- Human intelligence provides augmentation support and has the ability to make the final decision regarding the recommendation.
- Online Advertising relies on augmented and automatic targeting and optimization.
- Humans often make decisions based on recommendations from models.
- In the marketing process, a human has the autonomy to interrupt or terminate an AI/ML process or not act based on the model's suggestion.
- Limited
- Marketing AI/ML models make no decisions but only provide supplementary information to human decision-makers.
- ML models are used in the development of assumptions where humans review the output before setting the assumption.
- Model results quality checked by a human.
- No AI used. 100% human intervention
- No decisions are being made in the way we are using the data.
- AI/ML recommendations are subject to human review to ensure that the recommendation is empirically derived and statistically sound.

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

- Our direct mail models are generally run in an automated way, but humans make decisions around what thresholds to apply (i.e., those above the threshold are sent the mail) and which customer segments to apply the model to.
- Predictor identification and monitoring, model performance reviews related to model area under the curve (AUC), model optimization based on end user engagement and the activity surrounding recommendations presented and whether this activity is in line with business objectives. Humans are constantly involved with monitoring and optimization (daily), including a standard cadence is a formal review (weekly) of end user engagement (volume), model ingestion/ performance/output.
- There are bi-weekly meetings as well, in addition to overall governance meetings.
- Predictor identification and monitoring, model performance reviews related to model area under the curve (AUC), model optimization based on end user engagement and the activity surrounding recommendations presented and whether this activity is in line with business objectives. Humans are constantly involved with monitoring and optimization (daily), including a standard cadence is a formal review (weekly) of end user engagement (volume), model ingestion/ performance/output.
- There are bi-weekly meetings as well, in addition to overall governance meetings.
- Targeted advertising is automated by a third-party
- The AI models do not make decisions on their own.
- The company's AI Models used for marketing purposes provide augmentation and support levels of decisions and have a human in the loop who uses the result of the AI Model as an input for a decision. The degree of human involvement varies with each use-case and its risk profile.
- The majority of marketing analyses or decisions that are made using AI/ML are then taken by a human to critique and then used if determined appropriate. "Audiences" are captured by web browsers and social media platforms that are then used by [Company] to market to those audiences.
- the model advises the human that makes the decision
- There are no current Company models with AI/ML components for pricing or underwriting, but we would expect in the future varied amounts of human intervention depending on the model application. For more automated models, human intelligence may be involved only through review of trending, the appeals process, and/or setting or adjusting thresholds for automation. For models using AI/ML for augmentation and support, human intelligence would be applied in all decision-making. In all applications, there would be controls in place to provide for an appropriate level of oversight and model assessment.
- There is always a person involved in every final decision.
- There is no human intervention involved with send-time optimization tool.
- To be determined if we move ahead.
- We may adjust spend or target parameters based on performance"
- To the extent that use of personal information is contemplated, we plan to use AI/ML results as just one point of reference for making a marketing decision.
- To the extent that use of personal information is contemplated, we plan to use AI/ML results as just one point of reference for making a marketing decision. We do not use AI/ML in this way.

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

### Risk Management

- A human is in the loop for AI/ML decisions. Periodic reviews for accuracy and consistency of results is performed by processes owners and model testing is performed to verify accuracy of model output.
- AI/ML Provides support to identify potential risk and a human has the ability to make the final decision regarding the recommendation.
- All Human
- All model results go through human scrutiny and rigorous testing of results
- All underwriting decisions are currently reviewed by a human underwriter, no decisions are made automatically.
- For our Fraud models, our models identify suspicious transactions or activities that warrant further investigation. Informed by these model outputs and other sources, our investigators determine appropriate case handling.
- Human intervention is involved in the model build to screen inputs to the model and model performance. Humans can override any decision.
- If a model predicts that an application is fraudulent, human intelligence intervenes to lead a manual investigation and potentially rescind the policy.
- Informs decision making. So human intelligence is 100%. STP rate is 22%, so human intervention is 78%.
- ML models are used in the development of assumptions where humans review the output before setting the assumption.
- No AI used. 100% human intervention
- AI/ML recommendations are subject to human review to ensure that the recommendation is empirically derived and statistically sound.
- There are no current Company models with AI/ML components for pricing or underwriting, but we would expect in the future varied amounts of human intervention depending on the model application. For more automated models, human intelligence may be involved only through review of trending, the appeals process, and/or setting or adjusting thresholds for automation. For models using AI/ML for augmentation and support, human intelligence would be applied in all decision-making. In all applications, there would be controls in place to provide for an appropriate level of oversight and model assessment.
- There are no current Company models with AI/ML components for risk management, but we would expect future application of practices consistent with those described in the marketing response.

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### K. How are Results Monitored?

The companies were asked to respond to the following question with respect to (1) pricing and underwriting, (2) marketing, and (3) risk management:

- “If AI/ML influences decisions making, then Decision Making Influence “How are results monitored?”

The responses by operational area are provided below.

#### Pricing & Underwriting

- A human is in the loop for AI/ML decisions. Periodic reviews for accuracy and consistency of results is performed by processes owners and model testing is performed to verify accuracy of model output.
- Every model input and output is recorded. Audit process.
- For current Company models with AI/ML components, standard quality assurance analytics are in place to monitor results of processes to ensure consistency with model expectations and provide trending that is reviewed by humans.
- human reviews all results
- Manually
- Milliman is responsible for monitoring and testing the processes developed that is used for RX history.
- Model holdout analysis, tracked KPIs, input & target monitoring
- Models are monitored on an ongoing real-time basis, as outlined in the model governance policy, to ensure their performance is in line with business expectation and are not degrading in their performance. Models are retired, retrained, or updated as needed to align to business need, and to account for any shift in performance, including data drift or concept drift, or change in business need over time.
- Monthly/quarterly monitoring in place for supplemental life model. Month/y/Quarterly monitoring planned for pricing models.
- Ongoing Monitoring is required for all Models, including AI/ML Models, to ensure the integrity of the Model implementation, including ongoing verification of the processing component, as well as the continuing adequacy of Model performance. While the specific requirements for Ongoing Monitoring are left to the details agreed upon in each Model's individual Ongoing Monitoring Plan, the purpose is to confirm that the Model is performing as intended.
- Our developing AI control framework includes back-end testing of underwriting outcomes. Results are monitored by a cross-disciplinary team of underwriting, pricing, product, actuarial and control function support.
- [Company] Enterprise risk management, legal and compliance programs, and internal and independent audit oversight compose the core components of [Company's] global compliance and risk management programs. This involves frequent and regular human oversight in the form of assessments and audits, and the use of different monitoring tools to ensure that the Company's models, including their results, are empirically derived and statistically sound.
- Quality review

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- reporting of group scores
- Results are monitored for any technical anomalies that may require an update to the model. Results are also monitored by the end users for any anomalies or drifts based on guidelines and user's past experience and expertise. Where results differ substantially from anticipated outcomes, these are carefully reviewed and corrective action is taken as needed.
- The company has committed resources towards exploring fairness testing methodologies."
- Results are monitored through underwriting effectiveness
- Results are regularly monitored by our underwriting department and by data scientists via dashboards and appropriate analytics.
- [Company] utilizes industry standard monitoring programs including Random Holdouts and Post Issue Audits to monitor results.
- The Life Underwriting team monitors all results, whether it be application approvals or denials.
- The results of our underwriting programs are monitored on a monthly basis comparing the expected and past outcomes to actual outcomes. During this review the outcome of AI/ML underwriting tools are reviewed independently and in conjunction with final decision outcomes.
- There are no current Company models with AI/ML components for pricing or underwriting, but we would expect future application to include quality assurance analytics that monitor results of processes to ensure consistency with model expectations and provide trending that would be reviewed by humans.
- To monitor results, human underwriters will perform back testing on a sample of approved applications.
- Underwriters make a note that's captured in our databases explaining when a decision was made based on AI (e.g., LexisNexis Risk Classifier score), and an applicant is notified if their policy is approved or declined based on such AI tools. An FCRA letter is ordered for any applicant whose decision was based on LexisNexis Risk Classifier. Pricing assumptions informed by ML models are reviewed regularly via actuarial experience studies and generally are validated upfront by external consultants.
- Underwriters review and score over 1000 cases a month and we review and recalibrate based on that information.
- Various summary reports of predictions, model predictions vs actuals, assessments of input and output data distribution stability
- We generally check for impacts to business metrics and statistical metrics like drift and model performance decay. In addition, individual cases may be reviewed by human experts when appropriate. For our accelerated underwriting model, we still require full underwriting for a random sample of applicants who the model determined to be eligible for acceleration, to help us further assess model performance.
- We have continuous monitoring/auditing on results and impact to improve performance. We have standardized reports that are refreshed on a daily basis, and we have OKRs that drive continued adherence and performance within our funnel.
- We monitor aggregated distributional results relative to expectations, and we also obtain additional underwriting information on a random sample of these cases to validate model performance.
- We monitor distribution of risk class decisions by the underwriters, how many customers are receiving underwriting offers through our accelerated underwriting process, how accurate our



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accelerated underwriting offers are, and how often certain underwriting data elements are causing changes in risk classes or accelerated underwriting declines. When we introduce a new data element, we will track more closely and frequently. If we had an AI/ML model making/assisting in underwriting decisions, we would use similar techniques to monitor.

- We monitor the performance of our automated UW programs using Tableau dashboards. The statistics in the dashboards include number of cases processed, UW rate class distribution, reasons for adverse decisions, impairment analysis, placement rates, etc.
- We order attending physician statements on a random sample of policies for quality control purposes.
- We self-audit our underwriting files to ensure compliance with applicable procedures and regulations.

### Marketing

- A human is in the loop for AI/ML decisions. Periodic reviews for accuracy and consistency of results is performed by processes owners and model testing is performed to verify accuracy of model output.
- For current Company models with AI/ML components, standard quality assurance analytics are in place to monitor results of processes to ensure consistency with model expectations and provide trending that is reviewed by humans.
- Humans review results on a regular basis.
- Manually
- Marketing results are monitored against specific KPIs. If these metrics deviate from our experience, expected performance or historical statistics, marketing campaigns are terminated.
- Model predictions are captured to report on model usage and analyze trends across time. This data is also used to assess model performance and ensure there is no degradation of performance.
- Online Advertising results are monitored regularly against benchmarks for impressions, engagement and cost
- Models are developed or run only as needed to inform a human decision-maker; as such, all results are necessarily monitored through manual review.
- Month/y/Quarterly monitoring planned for pricing models.
- Ongoing Monitoring is required for all Models, including AI/ML Models, to ensure the integrity of the Model implementation, including ongoing verification of the processing component, as well as the continuing adequacy of Model performance. While the specific requirements for Ongoing Monitoring are left to the details agreed upon in each Model's individual Ongoing Monitoring Plan, the purpose is to confirm that the Model is performing as intended.
- [Company's] Enterprise risk management, legal and compliance programs, and internal and independent audit oversight compose the core components of [Company's] global compliance and risk management programs. This involves frequent and regular human oversight in the form of assessments and audits, and the use of different monitoring tools to ensure that the Company's models, including their results, are empirically derived and statistically sound.
- Quality review
- Responsible marketing personnel analyze data from send time optimization outcomes and review results with management.



## Life Insurance Artificial Intelligence/Machine Learning Survey Results

- Results are monitored
- Results are monitored by reviewing the results of a marketing campaign.
- Results are monitored for any technical anomalies that may require an update to the model. Results are also monitored by the end users for any anomalies or drifts based on guidelines and user's past experience and expertise. Where results differ substantially from anticipated outcomes, these are carefully reviewed, and corrective action is taken as needed.
- The company has committed resources towards exploring fairness testing methodologies."
- Results are monitored through the effectiveness of our marketing program.
- Results are monitored via human review of pre-defined metrics (e.g., opens, click-throughs, responses, etc.) and used to inform future marketing efforts
- Results/decisions/flows are collected, analyzed, monitored by a human before being used for marketing purposes and/or technique
- Retrospective analysis of performance
- There are no current Company models with AI/ML components for pricing or underwriting, but we would expect future application to include quality assurance analytics that monitor results of processes to ensure consistency with model expectations and provide trending that would be reviewed by humans.
- These results are monitored through the third-party's platform.
- To be determined if we move ahead. We might monitor cost per click and lead conversion.
- tracked KPIs, input & target monitoring
- Various summary reports of predictions, model predictions vs actuals, assessments of input and output data distribution stability
- We check the performance of the models against the realized ground truth (e.g., whether recipients of marketing mail made a purchase or not).
- We monitor distribution of risk class decisions by the underwriters, how many customers are receiving underwriting offers through our accelerated underwriting process, how accurate our accelerated underwriting offers are, and how often certain underwriting data elements are causing changes in risk classes or accelerated underwriting declines. When we introduce a new data element, we will track more closely and frequently. If we had an AI/ML model making/assisting in underwriting decisions, we would use similar techniques to monitor.
- Weekly model performance reports (ex. AUC), Weekly status reports (broader in terms of what is reported to leadership), model governance (a formal plan)
- [Company] relies on model governance by its vendor and is currently reviewing its own governance practices consistent with applicable law.

### Risk Management

- A human is in the loop for AI/ML decisions. Periodic reviews for accuracy and consistency of results is performed by processes owners and model testing is performed to verify accuracy of model output.
- Every model input and output is recorded. Audit process.
- For cases referred by the model and reviewed by our investigators, we track whether fraud was actually found or not.
- Informs decision making. So human intelligence is 100%. STP rate is 22%, so human intervention is 78%.

## Life Insurance Artificial Intelligence/Machine Learning Survey Results

- Manually
- Model predictions are captured to report on and be monitored by risk experts. When an item is flagged as an anomaly or other risk, it is moved up to be then taken by a risk expert for further investigation.
- Ongoing Monitoring is required for all Models, including AI/ML Models, to ensure the integrity of the Model implementation, including ongoing verification of the processing component, as well as the continuing adequacy of Model performance. While the specific requirements for Ongoing Monitoring are left to the details agreed upon in each Model's individual Ongoing Monitoring Plan, the purpose is to confirm that the Model is performing as intended.
- Operation teams review results.
- (Company's) Enterprise risk management, legal and compliance programs, and internal and independent audit oversight compose the core components of [Company's] global compliance and risk management programs. This involves frequent and regular human oversight in the form of assessments and audits, and the use of different monitoring tools to ensure that the Company's models, including their results, are empirically derived and statistically sound.
- There are no current Company models with AI/ML components for pricing or underwriting, but we would expect future application to include quality assurance analytics that monitor results of processes to ensure consistency with model expectations and provide trending that would be reviewed by humans.
- Through random hold out cases as well as post issue audits. Underwriter feedback is also in play.
- Various summary reports of predictions, model predictions vs actuals, assessments of input and output data distribution stability
- We monitor distribution of risk class decisions by the underwriters, how many customers are receiving underwriting offers through our accelerated underwriting process, how accurate our accelerated underwriting offers are, and how often certain underwriting data elements are causing changes in risk classes or accelerated underwriting declines. When we introduce a new data element, we will track more closely and frequently. If we had an AI/ML model making/assisting in underwriting decisions, we would use similar techniques to monitor.