

EXPOSURE DRAFT
07.17.2023

NAIC MODEL BULLETIN:

**USE OF ALGORITHMS, PREDICTIVE MODELS,
AND ARTIFICIAL INTELLIGENCE SYSTEMS BY INSURERS**

TO: All Insurers Licensed to Do Business In (*Insert Name of Jurisdiction*) (“Insurers”)

FROM: [Department/Commissioner]

DATE: [Insert]

RE: The Use of Artificial Intelligence Systems in Insurance

This bulletin is issued by the [] (Department) to remind all Insurers that hold certificates of authority to do business in the state that decisions impacting consumers that are made or supported by advanced analytical and computational technologies, including artificial intelligence (AI) systems (as defined below), must comply with all applicable insurance laws and regulations. This includes those laws that govern unfair trade practices. This bulletin sets forth the Department’s expectations as to how Insurers will govern the development/acquisition and use of such technologies and systems by or on behalf of the Insurer to make or support such decisions. This bulletin also advises Insurers of information and documentation that the Department may request during an investigation or examination of any Insurer that addresses the use of such technologies or systems.

SECTION I: INTRODUCTION, BACKGROUND, AND LEGISLATIVE AUTHORITY

Background

Artificial Intelligence (AI) techniques, including the application of sophisticated algorithms and machine learning (ML) to big data (BD), are transforming the insurance industry. AI techniques are deployed across all stages of the insurance life cycle, including product development, marketing, sales and distribution, underwriting and pricing, policy servicing, claim management, and fraud detection. AI can facilitate the development of innovative products, improve consumer interface and service, simplify and automate processes, and promote efficiency and accuracy. At the same time, using AI can bring unique risks, including the potential for inaccuracy, unfair bias resulting in unfair discrimination, and data vulnerability.

The Department encourages the development and use of innovation and AI Systems that contribute to safe and stable insurance markets. The Department also expects that Insurers that use AI Systems to support decisions that impact consumers will do so in a manner that complies with and is designed to assure that the decisions made using those systems meet the requirements of all applicable federal and state laws.

EXPOSURE DRAFT
07.17.2023

The Department recognizes the *Principles of Artificial Intelligence* that the NAIC adopted in 2020 as an appropriate source of guidance for Insurers as they develop and use AI systems. Those principles emphasize the importance of the fairness and ethical use of AI; accountability; compliance with state laws and regulations; transparency; and a safe, secure, fair, and robust system. These fundamental principles should guide Insurers in their development and use of AI Systems and underlie the expectations set forth in this bulletin.

Legislative Authority

The regulatory expectations and oversight considerations set forth in Section 3 and Section 4 of this bulletin rely on the following laws and regulations:

- **Unfair Trade Practices Model Act (#880)**: The *Unfair Trade Practices Act* [insert citation to state statute or regulation corresponding to Model #880] (UTPA), regulates trade practices in insurance by: 1) defining practices that constitute unfair methods of competition or unfair or deceptive acts and practices; and 2) prohibiting the trade practices so defined or determined.
- **Unfair Claims Settlement Practices Model Act (#900)**: The *Unfair Claims Settlement Practices Act*, [insert citation to state statute or regulation corresponding to Model #900] (UCSPA), sets forth standards for the investigation and disposition of claims arising under policies or certificates of insurance issued to residents of [insert state].

Actions taken by Insurers in the state must not violate the UTPA or the UCSPA, regardless of the methods the Insurer used to determine or support its actions. As discussed below, Insurers are expected to adopt practices, including governance frameworks and risk management protocols, that are designed to assure that the use of AI Systems does not result in: 1) unfair trade practices, as defined in []; or 2) unfair claims settlement practices, as defined in [].

- **Corporate Governance Annual Disclosure Model Act (#305)**: The *Corporate Governance Annual Disclosure Act* [insert citation to state statute or regulation corresponding to Model #305] (CGAD), requires Insurers to report on governance practices and to provide a summary of the Insurer's corporate governance structure, policies, and practices. The content, form, and filing requirements for CGAD information are set forth in the *Corporate Governance Annual Disclosure Model Regulation (#306)* [insert citation to state statute or regulation corresponding to Model #306]) (CGAD-R).

The requirements of CGAD and CGAD-R apply to elements of the Insurer's corporate governance framework that address the Insurer's use of AI Systems to support decisions that impact consumers.

- **Property and Casualty Model Rating Law (#1780)**: The *Property and Casualty Model Rating Law*, [insert citation to state statute or regulation corresponding to the Model #1780], requires that property/casualty (P/C) insurance rates not be excessive, inadequate, or unfairly discriminatory.

EXPOSURE DRAFT
07.17.2023

The requirements of [] apply regardless of the methodology that the Insurer used to develop rates, rating rules, and rating plans subject to those provisions. That means that an Insurer is responsible for assuring that rates, rating rules, and rating plans that are developed using AI techniques and predictive models that rely on BD and ML do not result in excessive, inadequate, or unfairly discriminatory insurance rates with respect to all forms of casualty insurance—including fidelity, surety, and guaranty bond—and to all forms of property insurance—including fire, marine, and inland marine insurance, and any combination of any of the foregoing.

- ***Market Conduct Surveillance Model Law (#693)***: The *Market Conduct Surveillance Model Law* [insert citation to state statute or regulation corresponding to Model #693] establishes the framework pursuant to which the Department conducts market conduct actions. These are comprised of the full range of activities that the Department may initiate to assess and address the market practices of Insurers, beginning with market analysis and extending to targeted examinations. Market conduct actions are separate from, but may result from, individual complaints made by consumers asserting illegal practices by Insurers.

An Insurer’s conduct in the state, including its use of AI Systems to make or support decisions that impact consumers, is subject to investigation, including market conduct actions. Section 4 of this bulletin provides guidance on the kinds of information and documents that the Department may request in the context of an AI-focused investigation, including a market conduct action.

SECTION 2: DEFINITIONS

For the purposes of this bulletin¹:

“**AI Systems**” is an umbrella term describing artificial intelligence and big data related resources utilized by Insurers.

“**Algorithm**” means a computational or machine learning process that augments or replaces human decision-making in insurance operations that impact consumers.

“**Artificial Intelligence**” is a term used to describe machine-based systems designed to simulate human intelligence to perform tasks, such as analysis and decision-making, given a set of human-defined objectives. This definition treats machine learning as a subset of artificial intelligence.

“**Bias**” is the differential treatment that results in favored or unfavored treatment of a person, group or attribute.

“**Big Data**” are data sets that are characterized by, at a minimum, their volume (i.e., size), velocity (i.e., speed of transmission), and variety (i.e., internal, external, including third-party data) that requires scalable computer architecture to analyze and model.

¹ Drafting note: Individual states may have adopted definitions for terms that are included in the model bulletin that may be different from the definitions set forth herein.

EXPOSURE DRAFT
07.17.2023

“Machine Learning” is a subset of Artificial Intelligence that simulates human learning by identifying patterns in data either supervised, unsupervised or through reinforcement learning styles to make decisions. **“Predictive Analytics”** and **“Predictive Modeling”** are related terms that refer to methods to identify patterns in data to make predictions.

“Third-Party” for purposes of this bulletin means an organization other than the Insurer that provides services, data or other resources related to AI.

EXPOSURE DRAFT
07.17.2023

SECTION 3: REGULATORY GUIDANCE AND EXPECTATIONS

Decisions impacting consumers that are made by Insurers using AI Systems must comply with all applicable legal and regulatory standards, including unfair trade practice laws. Those laws require, at a minimum, that decisions made by Insurers not be arbitrary, capricious, or unfairly discriminatory. Compliance with those standards is required regardless of the tools and methods Insurers use to make them.

AI Systems rely on large amounts of diverse, ever-changing, and sometimes nontraditional forms of data, sophisticated algorithms, and ML and deep learning techniques to develop complex and often opaque predictive models to make, inform, or support decisions. Current limitations on the availability of reliable demographic data on consumers make it challenging for Insurers and regulators to directly test these systems to determine whether the decisions made meet all applicable legal standards. Therefore, while the Department continues to encourage and emphasize the use of verification and testing methods for unfair bias that leads to unfair discrimination where possible, the Department recognizes that we must also rely upon robust governance, risk management controls, and internal audit functions to mitigate the risk that decisions driven by AI Systems will violate unfair trade practice laws and other applicable legal standards.

For these reasons, all Insurers authorized to do business in this state are encouraged to develop, implement, and maintain a written program for the use of AI Systems that is designed to assure that decisions impacting consumers made or supported by AI Systems are accurate and do not violate unfair trade practice laws or other applicable legal standards (AIS Program). An AIS Program that an Insurer adopts and implements should be reflective of, and commensurate with, the Insurer's assessment of the risk posed by its use of an AI System, considering the nature of the decisions being made, informed, or supported using the AI System; the nature and the degree of potential harm to consumers from errors or unfair bias resulting from the use of the AI System; the extent to which humans are "in-the-loop"; and the extent and scope of the Insurer's use or reliance on data, models, and AI Systems from third parties.

As discussed in Section 4, an Insurer's use of AI Systems is subject to the Department's examination to determine whether decisions made or actions taken in reliance on AI Systems are compliant with all applicable legal standards. Regardless of whether an Insurer adopts a formal AI Program or the scope of that Program, an Insurer's use of AI and AI Systems is subject to investigation, including market conduct actions. However, the existence of an AIS Program, including documentation related to the Insurer's adherence to the standards, processes, and procedures set forth in the AIS Program, will facilitate such investigations and actions.

AIS Program Guidelines

1.0 General Guidelines

1.1 The AIS Program should be designed to mitigate the risk that the Insurer's use of AI Systems to make or support decisions that impact consumers will result in decisions that are arbitrary or capricious, unfairly discriminatory, or that otherwise violate unfair trade practice laws.

EXPOSURE DRAFT
07.17.2023

1.2 The AIS Program should address governance, risk management controls, and internal audit functions.

1.3 The AIS Program should be adopted by the board of directors or an appropriate committee of the board. The AIS Program should vest responsibility for the development, implementation, monitoring, and oversight of the AIS Program and for setting the Insurer's strategy for AI Systems with senior management reporting to the board or an appropriate committee of the board.

1.4 The AIS Program should be tailored to and proportionate with the Insurer's use and reliance on AI and AI Systems. The AIS Program may be independent of or part of the Insurer's existing enterprise risk management (ERM) program. The AIS Program may adopt, incorporate, or rely upon, in whole or in part, a framework or standards developed by an official third-party standard organization, such as the National Institute of Standards and Technology.

1.5 The AIS Program should address the use of AI Systems across the insurance product life cycle, including product development and design, marketing, lead generation and use, applications, underwriting, rating, case management, claim administration and payment, and fraud detection.

1.6 The AIS Program should address all phases of an AI System's life cycle.

1.7 The AIS Program should address all of the AI Systems used by or on behalf of the Insurer to make decisions that impact consumers, whether developed by the Insurer or a third party and whether used by the Insurer or by an authorized agent or representative of the Insurer.

2.0 Governance

The AIS Program should include a governance framework for the oversight of AI Systems used by the Insurer. Governance should prioritize transparency, fairness, and accountability in the design and implementation of the AI Systems. An Insurer may consider adopting new internal governance structures or rely on the Insurer's existing governance structures, but the governance structure should address:

2.1 The standards that the Insurer adopted for its development of AI Systems generally and at each stage of the AI System life cycle.

2.2 The policies, processes, and procedures, including risk management and internal controls, to be followed at each stage of an AI System life cycle.

2.3 The requirements adopted by the Insurer to document compliance with the AIS Program policies, processes, procedures, and standards. Documentation requirements should be developed with Section 4 in mind.

EXPOSURE DRAFT
07.17.2023

2.4 Commensurate with the Insurer's development and use of AI Systems, defined roles, and responsibilities for key personnel charged with carrying out the AIS Program generally and at each stage of an AI System life cycle, including consideration of:

- a) A centralized or federated committee comprised of representatives from all disciplines and units within the Insurer, such as business units, product specialists, actuarial, data science and analytics, compliance, and legal.
- b) A description of the roles and responsibilities of each discipline and/or unit of the Insurer as they relate to the AI System, the AIS Program, and, where applicable, on the Insurer's internal AIS Program committee.
- c) The qualifications of the persons serving in the roles identified.
- d) Coordination and communication between persons with roles and responsibilities with the committee and among themselves.
- e) Scope of authority, chains of command, and decisional hierarchies.
- f) The independence of decision-makers and lines of defense at successive stages of the AI System life cycle.
- g) Escalation procedures and requirements.
- h) Development and implementation of ongoing training and supervision of personnel.

2.5 Monitoring, auditing, and reporting protocols and functions.

2.6 Specifically with respect to predictive models: the Insurer's processes and procedures for designing, developing, verifying, deploying, using, and monitoring predictive models, including a description of methods used to detect and address errors or unfair discrimination in the insurance practices resulting from the use of the predictive model.

3.0 Risk Management and Internal Controls

The AIS Program should document the Insurer's risk identification, mitigation, and management framework and internal controls for AI Systems generally and at each stage of the AI System life cycle. Risk management and internal controls should address:

3.1 The oversight and approval process for the development, adoption, or acquisition of AI Systems, as well as the identification of constraints and controls on automation and design to align and balance function with risk.

EXPOSURE DRAFT
07.17.2023

3.2 Data practices and accountability procedures, including data lineage, quality, integrity, bias analysis and minimization, suitability, and updating.

3.3 Management and oversight of algorithms and predictive models, including:

- a) Inventories and descriptions of algorithms and predictive models.
- b) Detailed documentation of the development and use of algorithms and predictive models demonstrating compliance with the AIS Program requirements.
- c) Measurements such as interpretability, repeatability, robustness, regular tuning, reproducibility, traceability, and the auditability of those measurements.
- d) Benchmarking against alternative models and systems.
- e) Evaluation for drift.

3.4 Validation, testing, and auditing of data, algorithms, and predictive models.

3.5 The protection of non-public information, including unauthorized access to algorithms or models themselves.

3.6 Data and record retention.

3.7 Specifically with respect to models: a narrative description of the model's intended goals and objectives and how the model is developed and validated to ensure that the AI Systems that rely on such models correctly and efficiently predict or implement those goals and objectives.

4.0 Third-Party AI Systems

Each AIS Program should address the Insurer's standards for the acquisition, use of, or reliance on AI Systems developed or deployed by a third-party, including, as appropriate, the establishment of standards, policies, procedures, and protocols relating to:

4.1 Due diligence and the methods employed by the Insurer to assess the third-party, its AI Systems, and its AI governance and risk management protocols in order to assure that third-party AI Systems used to make or support decisions that impact consumers are designed to meet the legal standards imposed on the Insurer itself.

4.2 The inclusion of terms in contracts with third parties that:

- a) Require third-party data and model vendors and AI System developers to have and maintain an AIS Program commensurate with the standards expected of the Insurer.

**EXPOSURE DRAFT
07.17.2023**

- b) Entitle the Insurer to audit the third-party vendor for compliance.
- c) Entitle the Insurer to receive audit reports by qualified auditing entities confirming the third-party's compliance with standards.
- d) Require the third-party to cooperate with regulatory inquiries and investigations related to the Insurer's use of the third-party's product or services and require the third-party to cooperate with the Insurer's regulators as part of the investigation or examination of the Insurer.

4.3 The performance of audits and other confirmatory activities to confirm the third-party's compliance with contractual and, where applicable, regulatory requirements.

SECTION 4: REGULATORY OVERSIGHT AND EXAMINATION CONSIDERATIONS

The Department's regulatory oversight of Insurers includes oversight of an Insurer's conduct in the state, including its use of AI Systems to make or support decisions that impact consumers. Regardless of the existence or scope of a written AIS Program, in the context of an investigation or market conduct action, an Insurer can expect to be asked about its governance framework, risk management, and internal controls (including the considerations identified in Section 3), as well as questions regarding any specific model, AI System, or its application, including requests for the following kinds of information and/or documentation:

1. Information and Documentation Relating to AI System Governance, Risk Management, and Use Protocols

1.1. Information and documentation related to or evidencing the Insurer's AIS Program, including:

- a) The written AIS Program or any decision by the Insurer not to develop and adopt a written AIS Program.
- b) Information and documentation relating to or evidencing the adoption of the AIS Program.
- c) The scope of the Insurer's AIS Program, including any AI Systems and technologies not included in or addressed by the AIS Program.
- d) How the AIS Program is tailored to and proportionate with the Insurer's use and reliance on AI Systems.

EXPOSURE DRAFT
07.17.2023

- e) The policies, procedures, guidance, training materials, and other information relating to the adoption, implementation, maintenance, monitoring, and oversight of the Insurer's AIS Program, including:
 - i. Processes and procedures for the development, adoption, or acquisition of AI Systems, such as:
 - (1) Identification of constraints and controls on automation and design.
 - (2) Data governance and controls, any practices related to data lineage, quality, integrity, bias analysis and minimization, suitability, and updating.
 - ii. Processes and procedures related to the management and oversight of algorithms and predictive models, including measurements, standards, or thresholds adopted or used by the Insurer in the development, validation, and oversight of models and AI Systems.
 - iii. Protection of non-public information, including unauthorized access to algorithms or models themselves.

1.2. Information and documentation relating to the Insurer's pre-acquisition/pre-use diligence, monitoring, oversight, and auditing of AI Systems developed or that a third party deployed, including any authorized agent or representative of the Insurer when acting as such.

1.3. Information and documentation relating to or evidencing the Insurer's implementation and compliance with its AIS Program, including documents relating to the Insurer's monitoring and audit activities respecting compliance, such as:

- a) Documentation relating to or evidencing the formation and ongoing operation of the Insurer's coordinating bodies for the development, use, and oversight of AI Systems, including documentation identifying key personnel and their roles, responsibilities, and qualifications.
- b) Management and oversight of algorithms, predictive models, and AI Systems, including:
 - i. The Insurer's inventories and descriptions of algorithms, predictive models, and AI Systems used by or on behalf of the Insurer to make or support decisions that impact consumers.
 - ii. As to any specific algorithm, predictive model, or AI System that is the subject of investigation or examination:

**EXPOSURE DRAFT
07.17.2023**

- (1) Documentation of compliance with all applicable AI Program policies, protocols, and procedures in the development, use, and oversight of algorithms, predictive models, and AI Systems deployed by or on behalf of the Insurer.
- (2) Information about data used in the development and oversight of the specific model or AI System, including the data source, provenance, data lineage, quality, integrity, bias analysis and minimization, suitability, and updating.
- (3) Information related to the techniques, measurements, thresholds, benchmarking, and similar controls adopted by the Insurer.
- (4) Validation, testing, and auditing, including evaluation of drift.

2. Third-Party AI Systems

Investigations and examinations of an Insurer may include requests for the following kinds of information and documentation related to data, models, and AI Systems developed by third parties that are relied on or used by or on behalf of the Insurer, directly or by an agent or representative.

- 2.1 Due diligence conducted on third parties and their data, models, or AI Systems.
- 2.2 Contracts with third-party AI System, model, or data vendors, including terms relating to representations, warranties, data security and privacy, data sourcing, data use, intellectual processes rights, confidentiality and disclosures, and cooperation with regulators.
- 2.3 Audits and confirmation processes performed with respect to third-party compliance with contractual and, where applicable, regulatory obligations.

The Department recognizes that Insurers may demonstrate their compliance with the laws that regulate their conduct in the state in their use of AI Systems through alternative means, including through practices that differ from those described in this bulletin. The goal of the bulletin is not to prescribe specific practices or to prescribe specific documentation requirements. Rather, the goal is to ensure that Insurers in the state are aware of the Department's expectations as to how AI Systems will be governed and managed and of the kinds of information and documents about an Insurer's AI Systems that the department expects an Insurer to produce when requested.

As in all cases, investigations and market conduct actions may be performed using procedures that vary in nature, extent, and timing in accordance with regulatory judgment. Work performed may include inquiry, examination of company documentation, or any of the continuum of market actions described in the NAIC's *Market Regulation Handbook*. These activities may involve the use of contracted specialists with relevant subject matter expertise.