

# Artificial Intelligence in Health Insurance

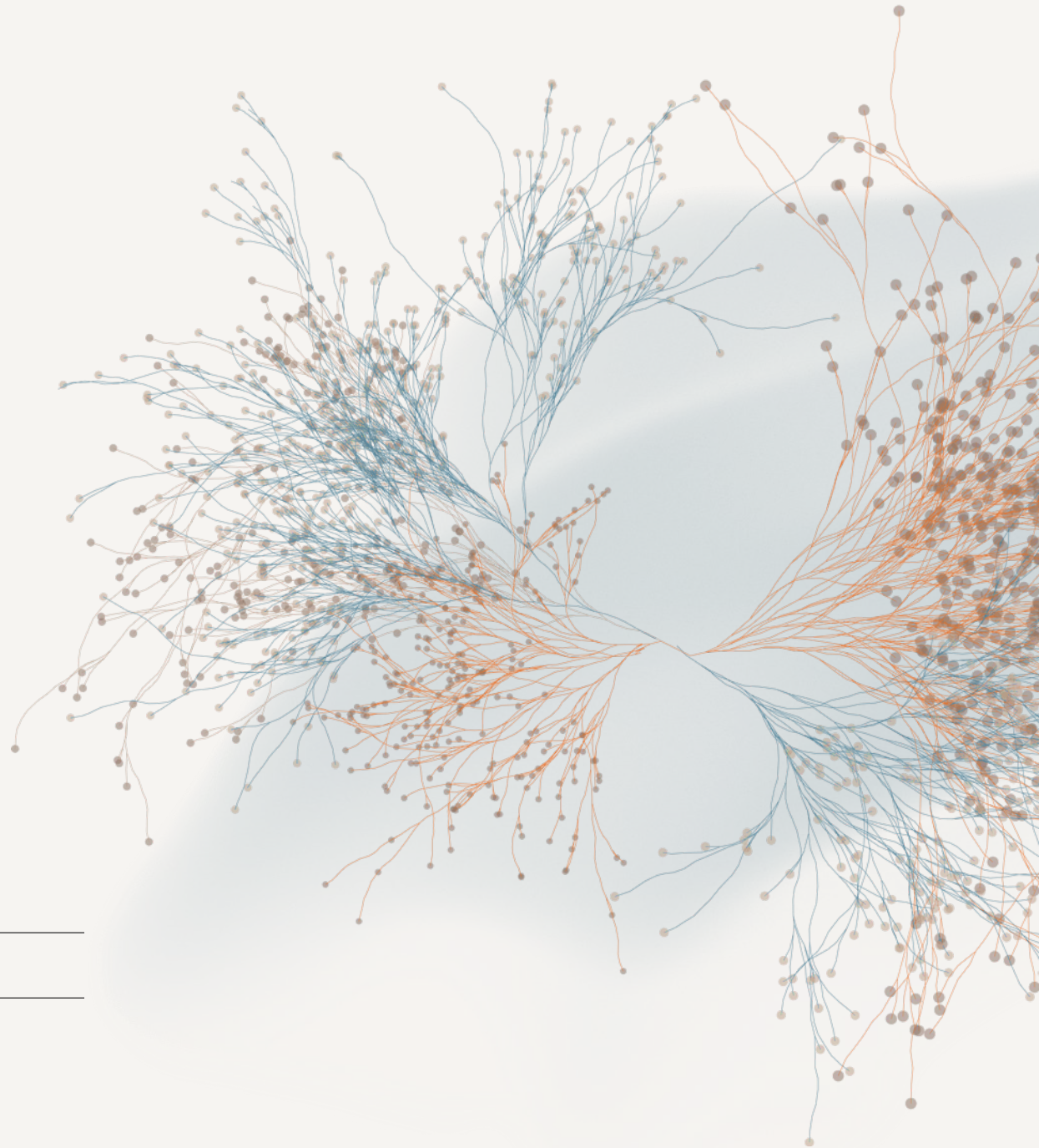
The use and regulation of AI in utilization management

Presentation to the NAIC Big Data and Artificial Intelligence (H) Working Group

---

11.17.2024

---



# Agenda

---

**01** Report Overview

---

**02** Key Findings

---

**03** Recommendations

---

**04** Conclusion

---



A woman with her hair in a bun is sitting in a meditative pose on a sandy beach. She is wearing a light-colored shirt and dark shorts. The background shows the ocean and a clear sky. The entire image has a semi-transparent blue overlay.

# NORC Health

Our expertise in health-related issues, from aging to immunizations to insurance and health systems, informs programs and policies that affect the lives of millions.

 Research You Can Trust™

---

# Report Overview

The report was developed in partnership with the NAIC Consumer Representatives for Health

**CONSUMER**

**HEALTH**

**ADVOCACY**

AT THE NAIC

The research was divided into three phases:

1. **Environmental Scan** – Review and summarize white and grey literature to examine the current landscape of AI in health insurance decision making processes, with a focus on prior authorization as a form of utilization management (UM), and preliminary efforts to regulate it.
2. **Key Informant Interviews** – Supplement the environmental scan to create a more holistic view on the industry’s current use and challenges of AI, including information that is not publicly known or published.
3. **Synthesis (White Paper Development)** – Combine the environmental scan and in-depth interview findings with policy recommendations.

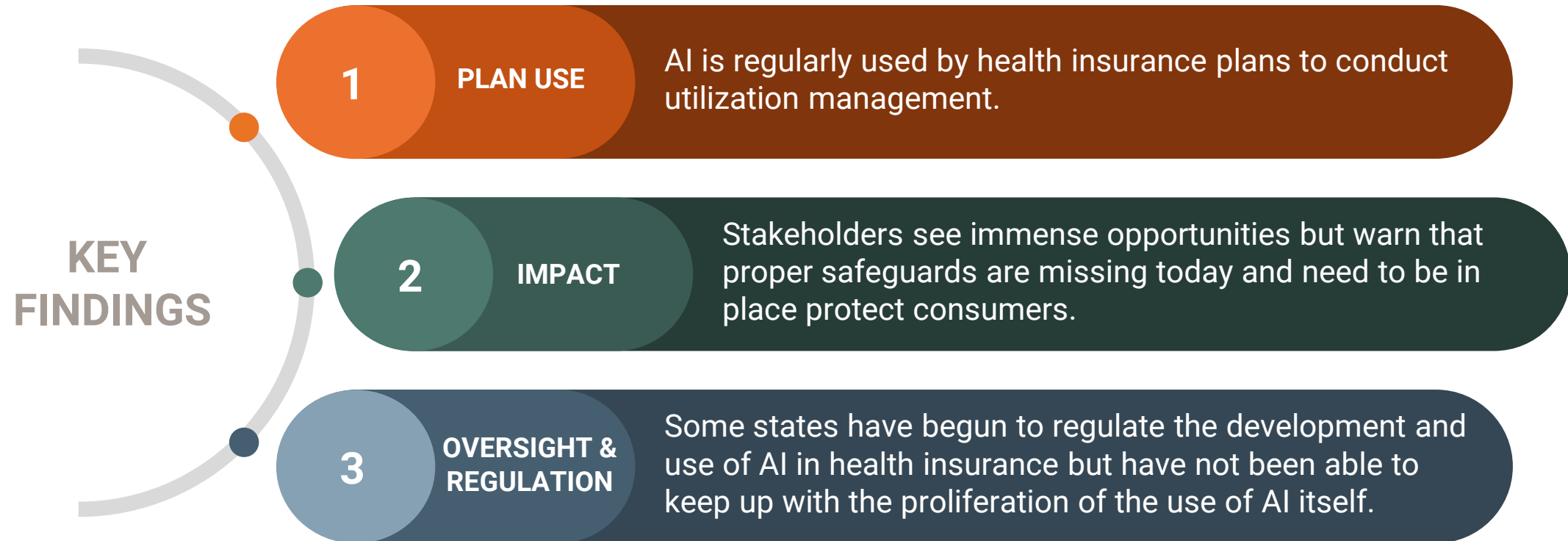
## Important Terminology

**Artificial intelligence (AI)** is a catch-all term referring to technologies that enable computers and machines the ability to mirror human learning and decision-making. Within AI, there are many different models and capabilities.

For this report, we are primarily focused on applications of **natural language processing (NLP)** and **machine learning (ML)**. NLP is a form of AI that allows computers to understand, interpret, and generate human language. ML refers to the ability of computer systems to learn and adapt beyond its initial instructions.

---

# Key Findings





The primary benefit of using AI for utilization management is the ability to reduce clerical burden, expedite approvals for patients, and enable practitioners to practice at the top of their license.

– **Health Plan Executive**

The chance to monitor and test AI systems is a chance to test and monitor outcomes to the standard that society expects.

– **Technical Expert**

The AI tools being used today are based on historically biased data.

It's one thing to look at a model and say, 'this algorithm is biased based on the data that we use to develop it,' but there is also a gap in the patients who are able to fight back against the denials.

– **Consumer Advocate**

Health plans leverage the abilities of AI to make UM decisions, specifically to respond to prior authorization requests

### Health plan sees the potential for AI to:

- Reduce administrative burden
- Allow clinical reviewers to work at the top of their license
- Speed approvals

### Research focused on three primary ways health plans are using AI in UM:

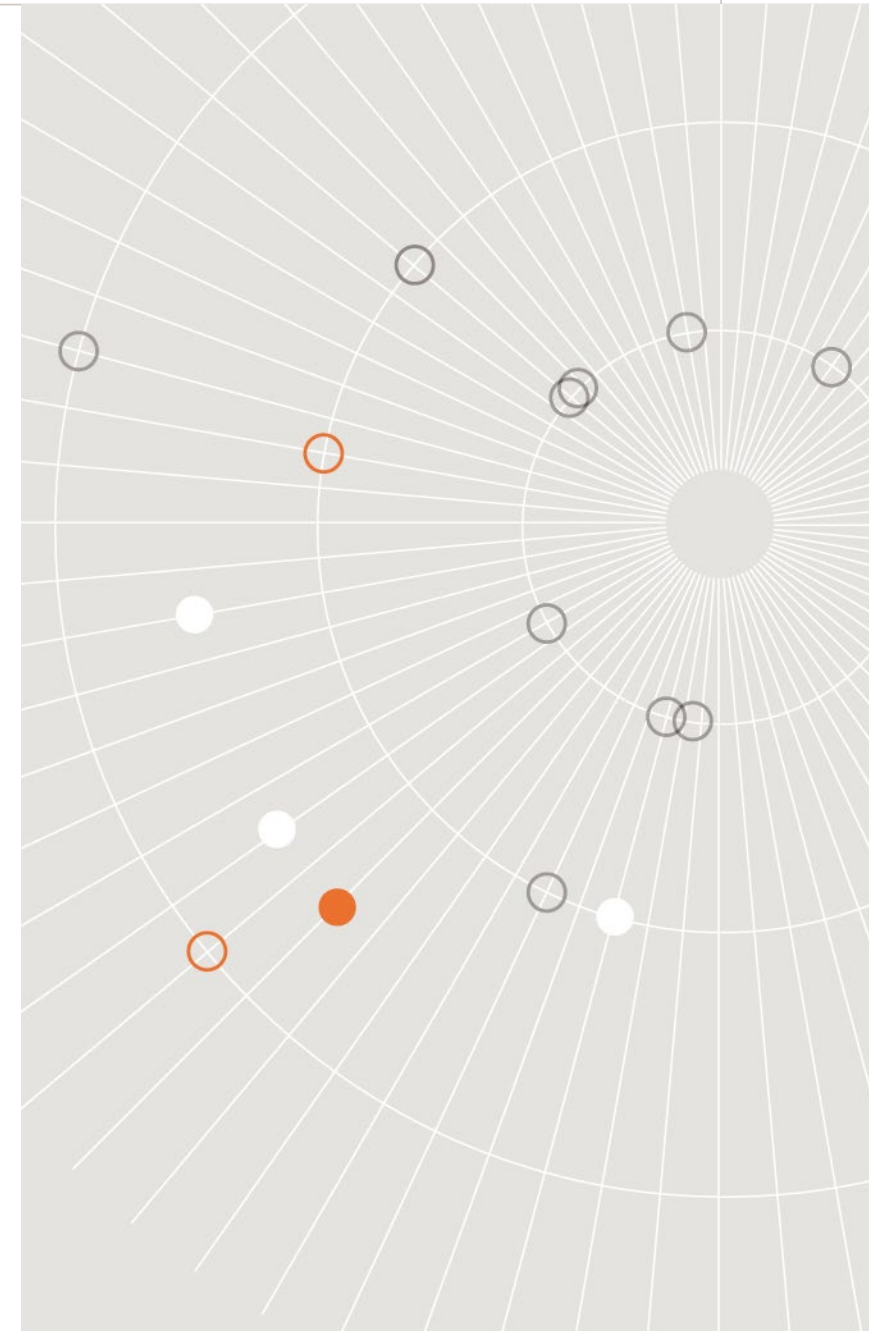
- Administrative-Only AI
- Decision-Making AI
- AI Learning Model

	Scans Large Datasets	Uses Fixed Inputs to Make Case Determinations	Evolves Algorithm Based on Data
Administrative-Only AI	✓		
Decision-Making AI	✓	✓	
AI Learning Model	✓	✓	✓

As AI tools are developed and deployed to make coverage decisions, concerns arise

In the absence of a comprehensive regulatory framework for the use of AI in health insurance, stakeholders have started to identify the potential risks that may adversely impact care delivery and health outcomes:

- **Tools trained by biased datasets**
- **Algorithms developed with misaligned incentives**
- **Machine learning systems developing their own processes**

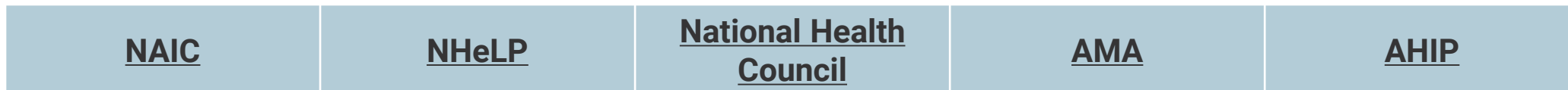


As AI in UM expands, the state regulatory landscape has been uneven in its ability to keep up with advancements

- **States have started to develop their own approaches on how to best regulate this evolving environment**



- **Many organizations have developed frameworks on how AI should be used and regulated in health insurance practices**



**CONSUMER**

**HEALTH**

**ADVOCACY**

AT THE NAIC

RECOMMENDATIONS



**TRANSPARENCY  
AND DATA**

Transparency, both to regulators and consumers, is seen as a crucial component of AI oversight as seen in both regulatory and legislative action to date, and as reflected in the guiding principles for AI put forward by health care advocates.



**ACCOUNTABILITY**

Transparency is critical to hold health insurance plans accountable, and when appropriate, liable for the harm caused by the integration of AI into UM activities. Accountability is necessary to hold parties liable for harm.



**ENSURING EFFECTIVE  
OVERSIGHT**

Regulators need to ensure that health insurance companies place humans with the appropriate clinical training, authority, at the center of decisions that impact patient care. Accessible appeals processes must be considered a right for all consumers.

# Transparency, both to regulators and consumers, is seen as a crucial component of AI oversight

- **Meaningful transparency is critical**; it must be clear, to both regulators and consumers, when AI is being used by health insurance plans for the purposes of UM and what role the AI plays in making determinations about coverage for care
- **Transparency must extend to disclosures about the data used to develop, train, and test the AI tools** (with an emphasis on consent for use and representativeness of the population), and the extent to which any AI tool can begin to train itself
- **Existing laws that are used to regulate data should be assessed for their applicability** to AI in utilization management

# The reliance on proprietary technologies obscures accountability for decisions when harm is done

- **Transparency is a necessary precursor** for any complaint or action taken to enforce regulation
- **Regulatory standards must clearly identify which parties are accountable** (e.g., health plans, technology developers, etc.) when AI tools are used in UM decisions that lead to consumer harm, including discrimination, breeches of privacy, and incorrect adverse determinations
- **Regular audits**, conducted on behalf of state regulatory agencies by parties with specialization in testing AI technologies, can be an effective way to both understand the ways AI is used in making UM decisions and hold the plans accountable for its use
- AI tools intended for UM decisions should be **built on standards of care that aim to achieve the highest level of quality**, and penalties for non-compliance need to be significant enough to have influence
- Governance structures that **measure and prevent harm to historically marginalized and minoritized populations** must be required



# Human oversight is important, but is not a panacea and accessible appeals processes must be prioritized

- **Robust and accessible appeals processes** for coverage denials need to be established and considered a guaranteed right for all health insurance consumers
- **Human oversight must be embedded into UM when AI is used** and those reviewers must have the authority and ability to overturn decisions made by the AI without undue consequences
- **AI regulation needs to be considered an evolving practice**, that relies on collaboration between regulators, technical experts, industry stakeholders, consumers, and consumer advocates

**CONSUMER**

**HEALTH**

**ADVOCACY**

AT THE NAIC

CONCLUSIONS

# The time to act is now



The rapid expansion of AI tools in health care insurance demands immediate regulatory attention to protect consumers from potential harm and discrimination, when AI is used in UM decisions.



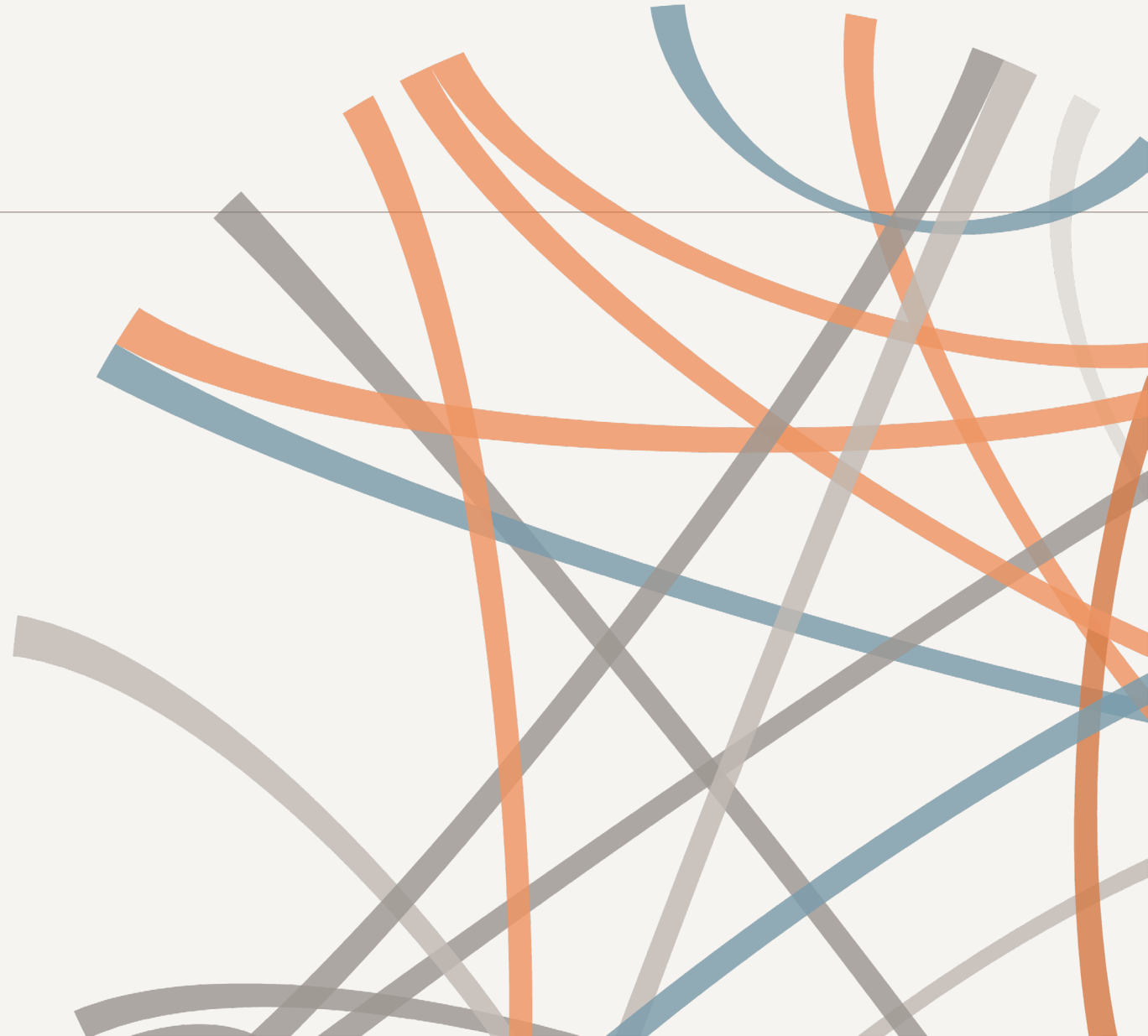
While this report outlines some key considerations, it is not exhaustive and instead attempts to offer a foundation for understanding current AI use cases in UM and highlights the urgent need for state and industry leaders to examine and regulate these practices.



The importance of acting now cannot be overstated. Without immediate safeguards, the risks posed by unchecked AI in health insurance processes will only continue to grow.

---

Questions?



# Thank you.

**Lauren Seno**  
Director  
seno-lauren@norc.org

---

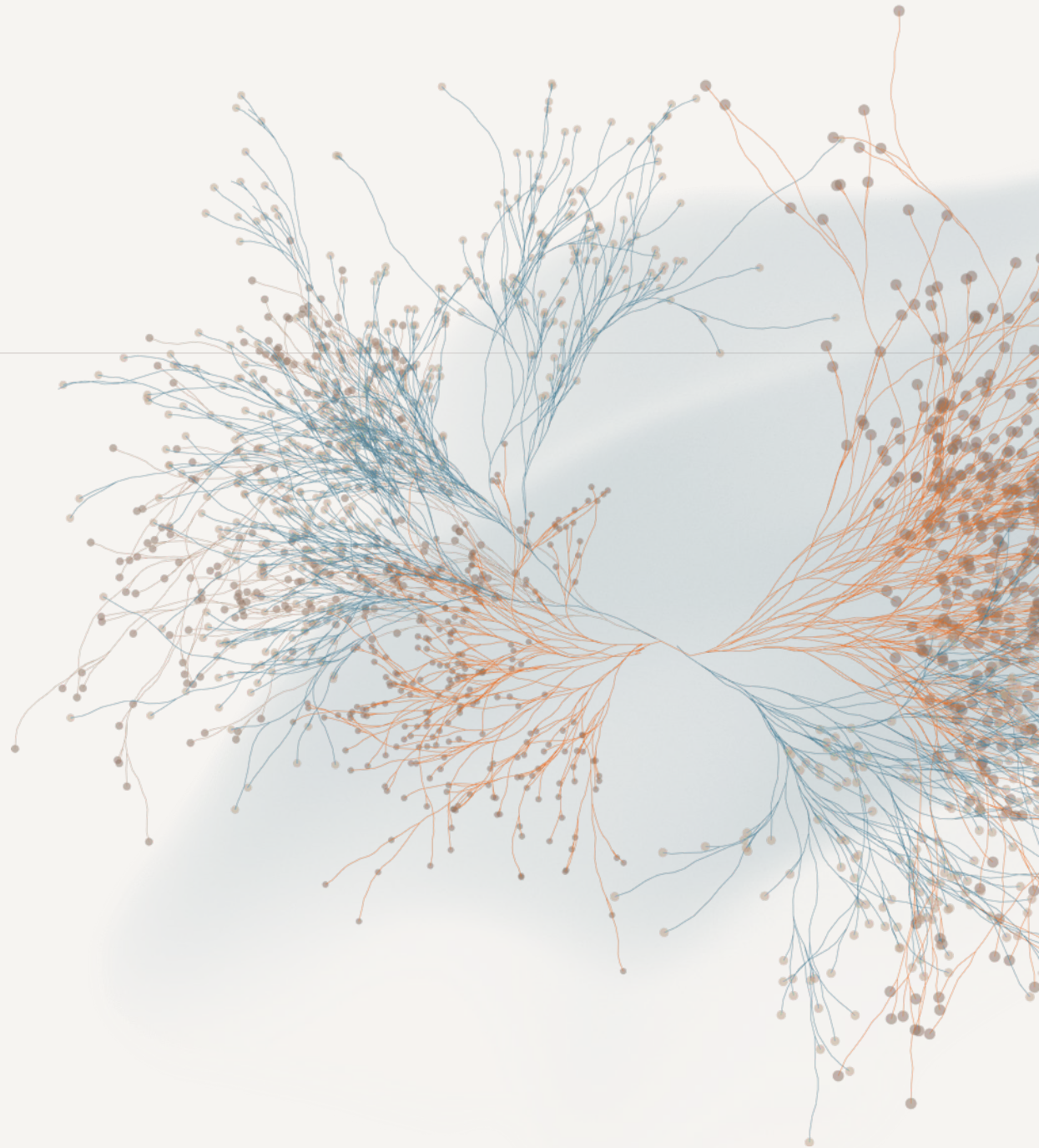
 Research You Can Trust™

---

 **NORC Health**

---

# Appendix



# Environmental scan search terms were grouped into three main categories

## 1. Utilization Management

- Use of AI by health plans in UM
- Most common applications of AI in UM

## 2. Equity and Bias

- How is bias measured and monitored in AI generally? By plans or regulators specific to AI in UM?
- Status of state regulatory actions – have states implemented self-assessments or currently monitor for bias?

## 3. Technical Components

- Are the tools or applications leveraging AI in UM aligned with intended purpose?
- How are the tools trained, tested, and monitored?

## Search Parameters

- Limited to materials published in/related to the US only
- Date range: 2009 – 2014
  - Expected most literature to be from 2018 – present, but wanted to be inclusive
- 219 initial results (113 included after secondary review)

Primary Search Terms	Detailed Search Terms
<b>Utilization Management</b>	
Application*, <b>or use*</b> of AI in insurance utilization management practices	("application" OR "use") AND ("AI") AND ("HEALTH INSURANCE") ("utilization management" OR "prior authorization" OR "denials" OR "care management" OR "managed care" OR "claims analytics")
Application*, <b>or use*</b> of AI in insurance utilization management practices by service line	("application" OR "use") AND ("AI") AND ("HEALTH INSURANCE") AND ("SERVICE LINE" OR "CONDITION" OR "DISEASE" OR "HEALTH CONCERN") ("utilization management" OR "prior authorization" OR "denials" OR "care management" OR "managed care" OR "claims analytics")
<b>Equity / Bias</b>	
Standards*, <b>or measures*</b> , <b>or assessments*</b> , to prevent biases in AI training in health care*, <b>or health insurance*</b>	("standards" OR "measures" OR "assessments") AND ("prevent" OR "mitigate") AND ("biases in AI training" OR "biases in AI development") AND ("health care" OR "health insurance")
Current tests for detecting biases in AI in health care*, <b>or health insurance*</b>	("current" OR "existing" OR "validated") AND ("tests for detecting biases in AI") AND ("health care" OR "health insurance")
<b>Technical Components</b>	
AI for utilization management in health care*, <b>or health insurance*</b> , intended use*, <b>or purpose*</b> , <b>or application*</b>	("AI") AND ("utilization management" OR "prior authorization" OR "denials" OR "care management" OR "managed care" OR "claims analytics") AND ("health care" OR "health insurance") AND ("intended use" OR "intended purpose" OR "intended application")
AI for health care*, <b>or health insurance*</b> , training standards*, <b>or measures*</b> , <b>or practices*</b> at development*, <b>or ongoing</b>	("AI") AND ("health care" OR "health insurance") AND ("training standards" OR "training measures" OR "training practices") AND ("development" OR "ongoing")



Each interview had a tailored interview guide, but each conversation aimed to cover five main questions

**1.**

**How has the use of AI in UM evolved in the past five to ten years?**

How are plans using AI today? How might that evolve in the future?

**2.**

**What are the intended outcomes for the use of AI in UM?**

When functioning as intended, what impact is AI having on cost and quality of care?

**3.**

**What unintended outcomes have we seen that are the biggest concern?**

What impact does AI in UM have on historically marginalized and minoritized communities?

**4.**

**How do current policy or regulatory actions address these concerns?**

What state and federal policies exist today that can be applied to AI in UM? Where are the gaps?

**5.**

**What policy or regulatory actions are needed to prevent consumer harm?**

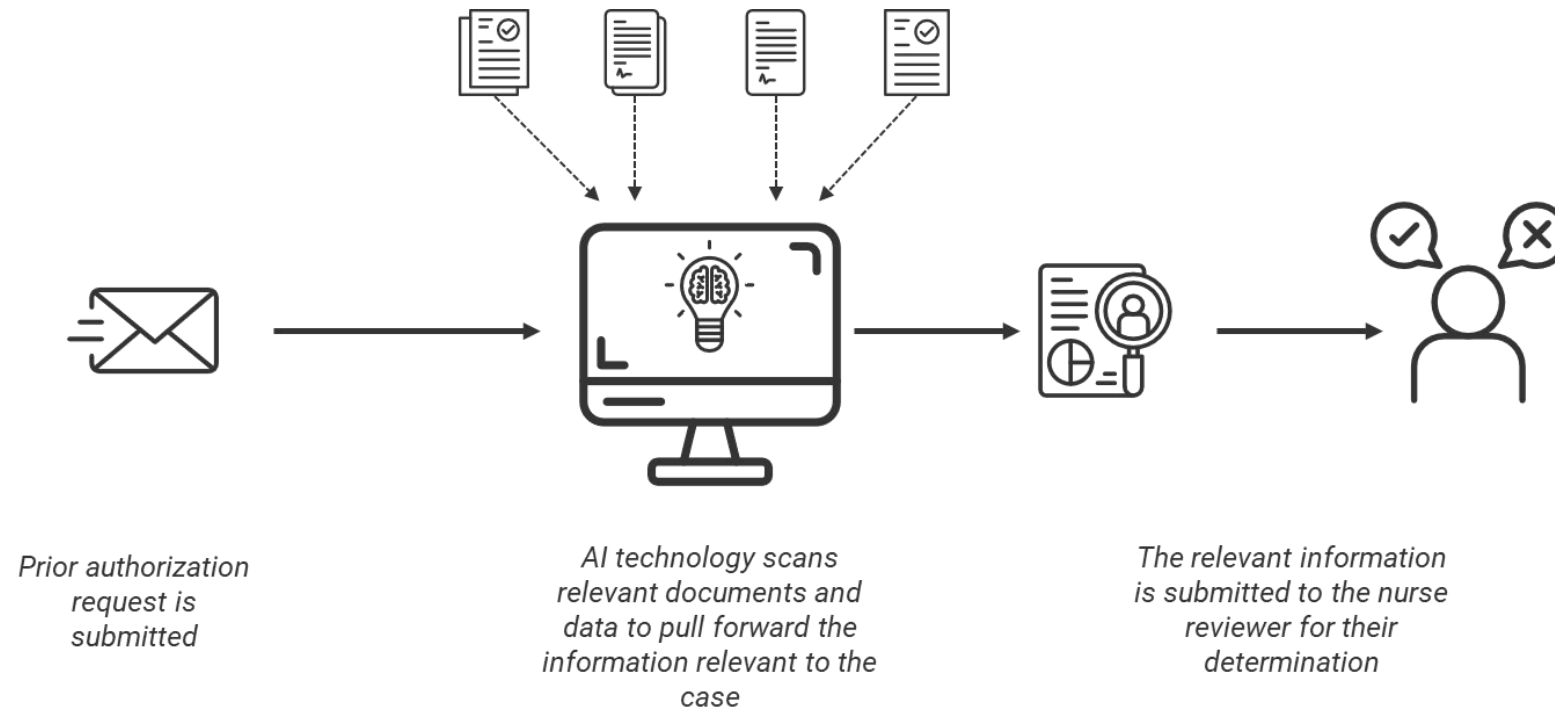
What should regulators consider when shaping potential action to prevent harm when AI is used in UM?

## Key Informant Interview Participants

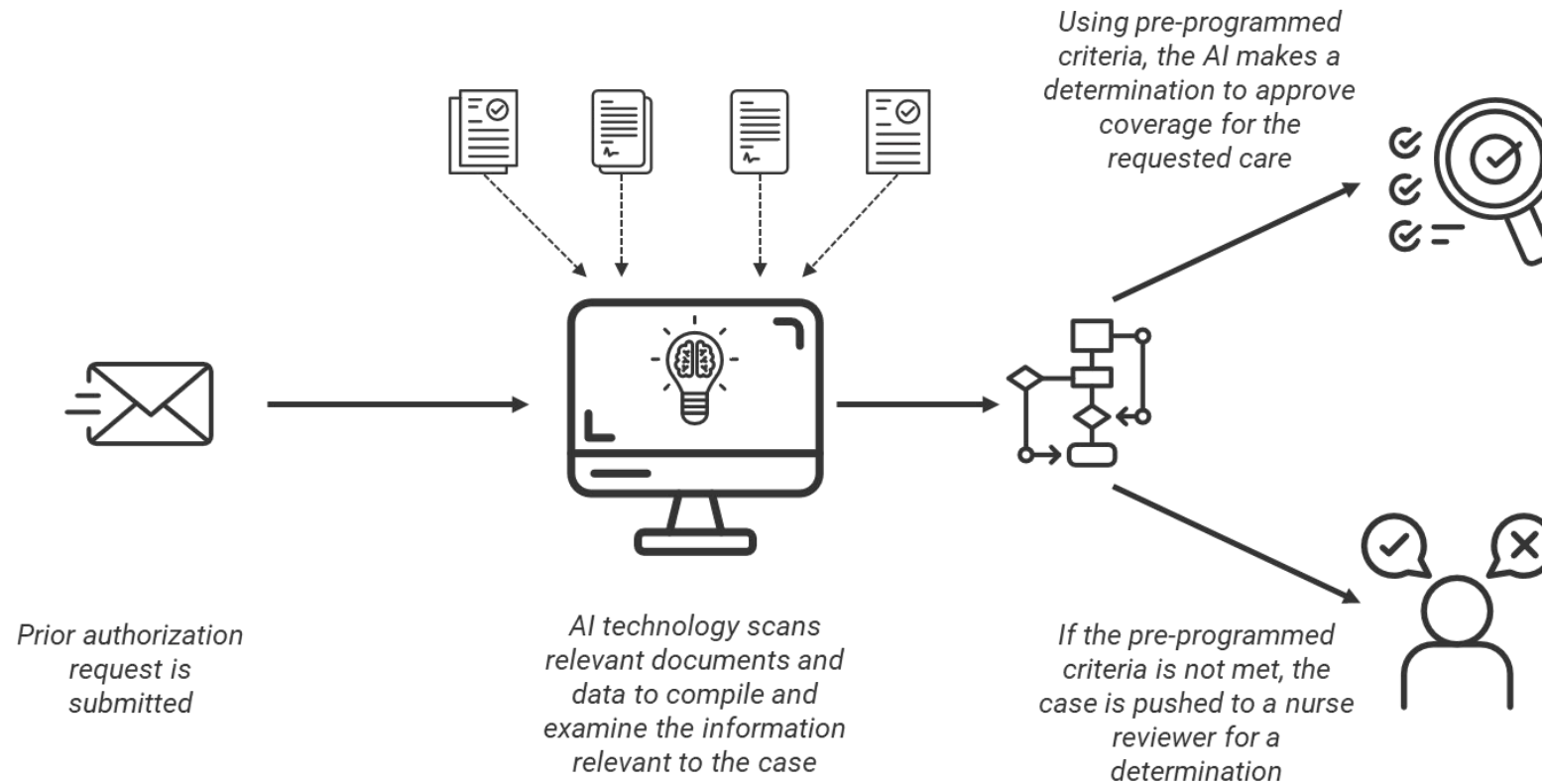
<b>Perspective</b>	<b>High-Level Descriptor</b>
<b>Health Plan</b>	Analytics Executive at a Regional Health Plan
<b>Thought Leader</b>	Health Policy Professor
<b>Consumer Advocate</b>	Attorney for Underserved Patients and Families
<b>Consumer Advocate</b>	Leader at a Patient Advocacy Organization*
<b>Regulator</b>	Representative from a State Department of Insurance
<b>Technical Expert</b>	Algorithmic Design and Measurement Consultant
<b>Provider</b>	Representatives from a Trade Group for Physicians

\*The second consumer advocate provided written responses to the structured interview questions.

## Example 1: Administrative-Only AI in UM



## Example 2: Decision-Making AI in UM



# Example 3: AI Learning Model for UM

