



Benefits, risks, and strategies for AI in underwriting

The need for thoughtful guardrails



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Introduction

AI's profound potential impact on underwriting

Summary

- ⚡ 31% faster processing times
- 📄 Reduced administrative overhead
- 🏷️ Potential for more equitable pricing
- ∞ Ongoing need for oversight and guardrails



Life insurance technology is undergoing a significant transformation, driven by advancements in automation and artificial intelligence (AI). This touches all aspects of the life insurance value chain, but is no more apparent than in the underwriting space, where traditionally paper-led and human-dependent processes have long been cost drivers for carriers.

Although the cautious attitudes of carriers, consumer advocates, and regulators alike are well founded (and we'll explore why shortly), the potential positive impact is profound: the incorporation of AI could help reduce administrative overhead and streamline decisioning, in some cases reducing processing time by up to 31%.

Evidence also suggests that the incorporation of certain kinds of AI into underwriting technology could potentially help reduce premium pricing disparities between similar risk groups, perhaps lowering the number of policy cancellations related to pricing.

In spite of all this, there remains an urgent need for thoughtful oversight. This technology, while powerful, must be paired with appropriate guardrails to protect both carriers and consumers.

Discrimination, reputational damage, and other risks

Some of the prevailing concerns with AI implementation in life insurance software, and in underwriting systems in particular, revolve around accuracy and reliability, transparency, and in unintended consequences like bias and discrimination. These aren't just operational hiccups, they represent real risks to a company's finances and public reputation.



The issues with AI implementation in underwriting systems



Bias and Discrimination

To explain it simply, AI is trained by the data you give it access to. A [study](#) by Azish Filabi, JD, MA, and Sophia Duffy, JD, CPA at The American College of Financial Services warns that AI models can unintentionally reflect or even amplify historical biases in the data used to train them. This could lead to:

- ✘ **Discrimination based on factors like race, gender, and ZIP code**
- ✘ **Regulatory violations, especially with regard to anti-discrimination laws**
- ✘ **Eroded trust and reputational damage if these issues become public**



Lack of Explainability

Trust is key. This is true for both regulators and your customers, so transparency and explainability are critical when considering integrating AI into life insurance underwriting.

While transparency helps ensure fairness, avoid hidden biases, and support compliance, lack thereof can leave declined applicants without answers, which can be a problematic breach of trust. On the other hand, explainability (the ability for humans to understand and interpret the decision-making processes of AI models) can help underwriters and data scientists monitor, audit, and refine models effectively. Without it, decision-making may become a "black box," increasing the risk of error or discrimination, and the erosion of trust.

The issues with AI implementation in underwriting systems



Overfitting and Underserving

Heavy reliance on AI without appropriate risk mitigation can also lead to overfitting, and in turn underserving.

Overfitting refers to the idea of an AI model learning its training data too well and overindexing it. As a result, the AI may struggle when presented with new, unseen data and anomalies.

An example of this in action is the potential overindexing of certain clinical data sets used to train AI. Many medical models rely on these clinical data sets to inform logic, but insurance medicine is a different practice than clinical medicine. For instance, clinical data sets may contain decades of historical information about diabetes outlooks. But assessing insurance risk is about determining what a diabetes diagnosis means for a person today, not what it meant for them in 1991.

Therefore, a bias towards certain clinical data sets risks overfitting, which can lead to discrimination and erroneous underwriting decisions (or underserving your ideal consumers).



Reputational Damage

Ultimately, the issues of bias, discrimination, and opaqueness around AI practices can weaken integrity, trust, and accountability.

On the issue of trust, consider this: the average person is still an AI skeptic. They don't understand the tech and worry it means their application will be denied outright by a cold, unfeeling computer, rather than being considered by a warm, empathetic human.

There's also an increased risk of financial penalties if a carrier is challenged to defend AI-based decisions but lacks the visibility or expertise to do so effectively. If these issues become public, there's potential for additional reputational damage (see above skepticism from the average person).

The takeaway here is that, as AI adoption grows, aligning technological innovation with transparent, ethical, and defensible decision-making is critical.

Guardrails are paramount

So, how can carriers leverage AI while also protecting themselves and consumers? As this technology becomes more powerful and ubiquitous, carriers must stay vigilant, employ a rigorous compliance framework, and remain an active, accountable stakeholder. Here are a few examples of what that might look like:



The “Responsible AI” movement



One strategy that’s gaining momentum is what’s known as Responsible AI (or RAI). Put simply, the idea is a principles-based approach to designing a more thoughtful relationship between humans and computers, striking the balance between reflecting human points of view and avoiding human-like bias.

Writing for Swiss Re, Maura Feddersen and Aspasia Angelakopoulou [identify some of the key principles of RAI](#) as fairness, transparency and explainability, security and safety, accountability, and privacy. They elaborate that “establishing confidence and trust in AI models requires integrating all of the above RAI principles. Additionally, insurers that integrate an RAI framework early in the AI model development lifecycle are better positioned to earn trust and mitigate downside risks, like bias and discrimination, from the outset.”

They go on to describe what they call the AI ‘goldilocks zone,’ where a company’s AI tech philosophy isn’t too averse or overly reliant, but rather balanced and measured, with a “trust but verify” attitude.

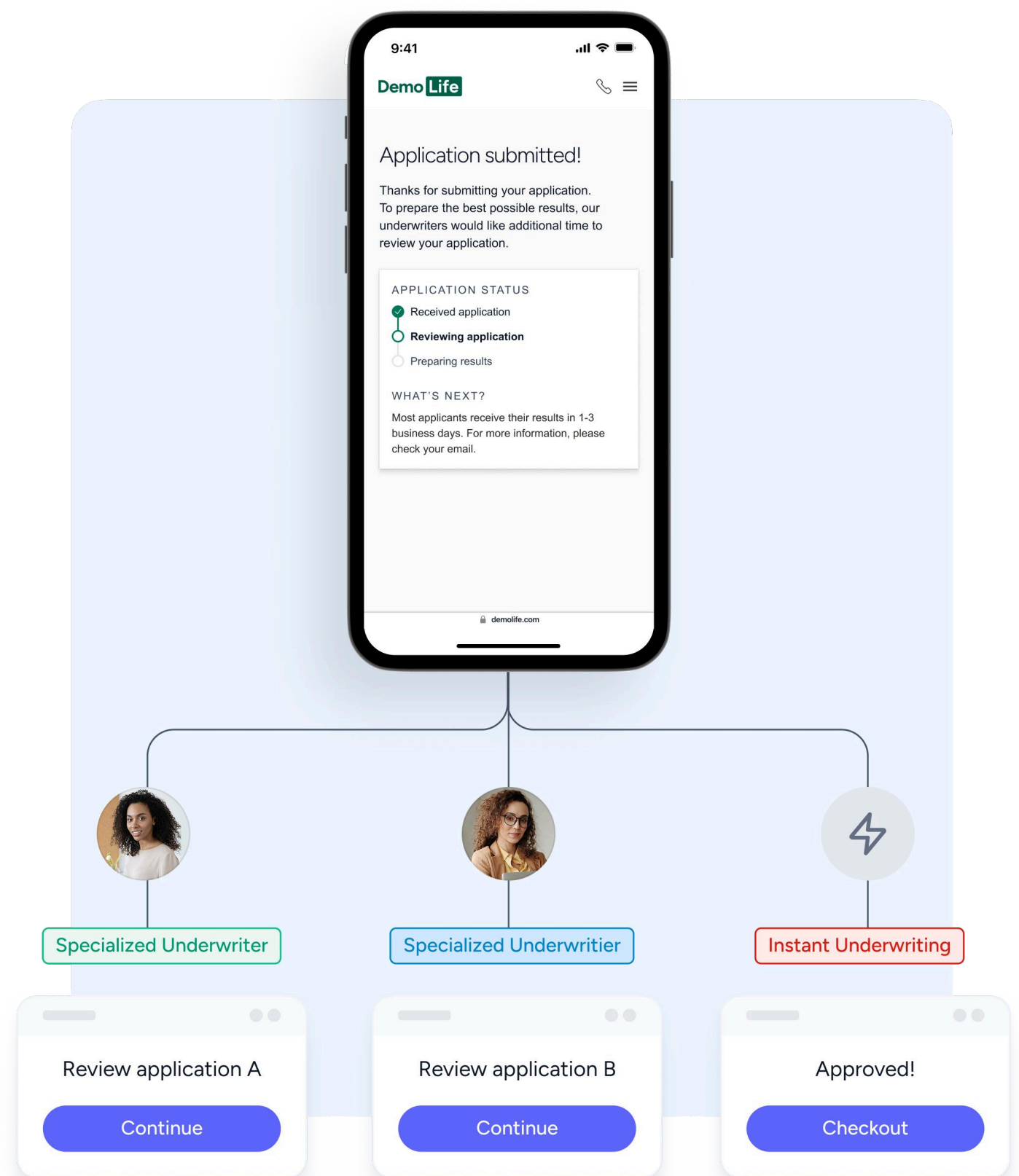
Empower, instead of replacing, your human underwriters

AI in underwriting should be viewed as a tool to help support underwriters, not as a replacement for humans altogether. If implemented correctly, the technology can help improve both human efficiency and approval rates.

As one example, AI could act as an intelligent gatekeeper, helping automatically sort through troves of applications in real time to help identify cases or specific flags that warrant review from an experienced human underwriter.

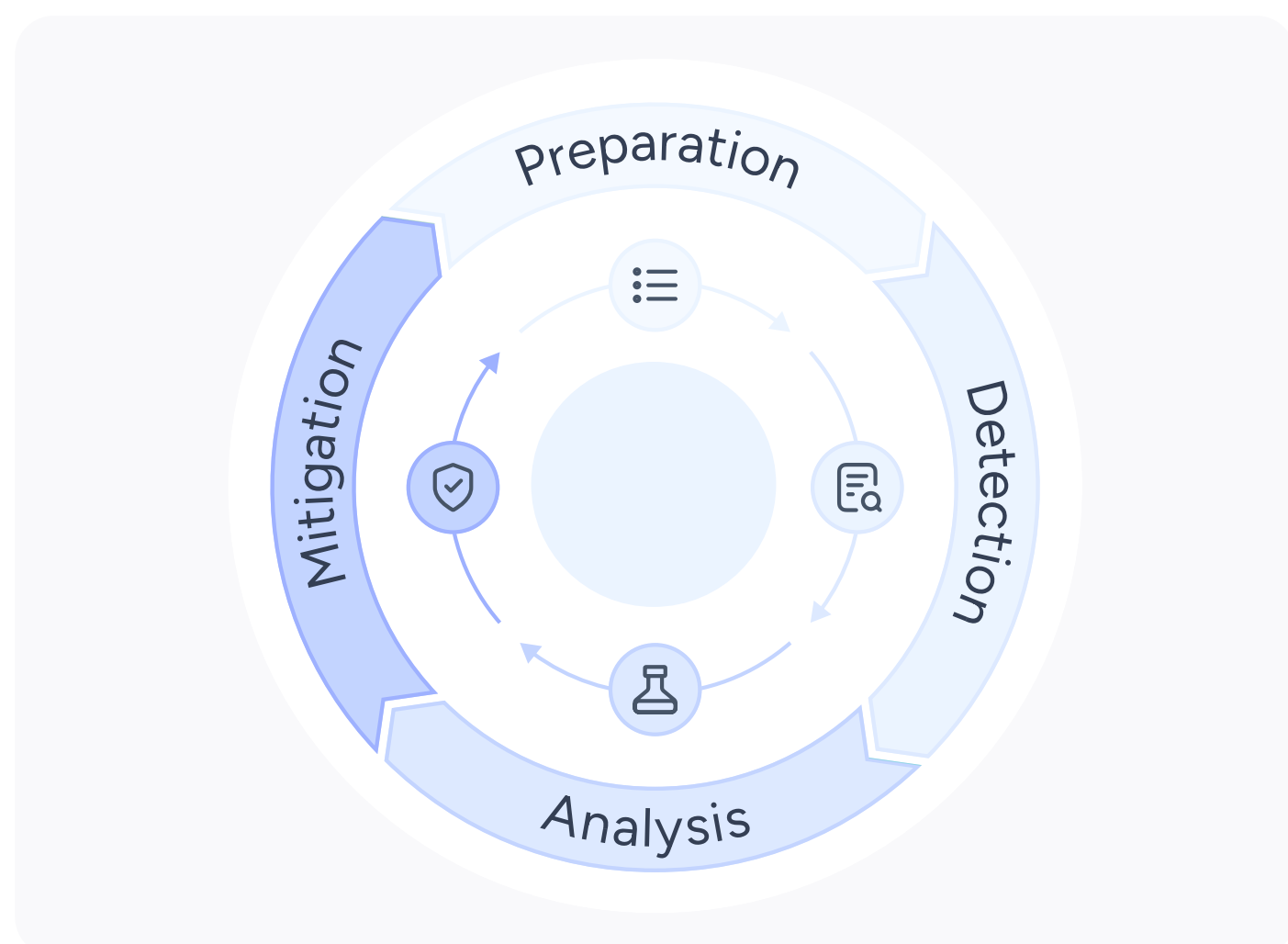
On the other side of the equation, underwriters can be armed with a tremendous amount of information at the outset, making their jobs that much easier — and allowing more time and energy to be spent on high touch cases that may require more specialized expertise.

Think of AI as the first step in the process; it's a powerful tool that can help analyze data at scale. But human underwriters serve as the vital next step in the process, ensuring decisions remain fair, accurate, and in line with regulatory and ethical standards. Combining the strengths of both AI and your trained underwriting experts can improve efficiency while upholding the trust and responsibility essential to life insurance decisions.



Continued refinement

The data used to train underwriting algorithms evolves over time, influenced by medical advances, demographic shifts, and even changes in consumer behavior.



For example, a model trained on data from a decade, or even a year, ago might not properly reflect current mortality risks for people with conditions like HIV or diabetes, which are now more manageable due to medical progress. Performance indicator data like risk distribution and pricing is another example of a moving target that isn't "set it and forget it."

As such, one of the key responsibilities that comes with adopting AI-driven underwriting is the continued monitoring, measuring, and reevaluation of the rules and models in play.

Carriers cannot passively allow AI models to evolve without regular audits, as these systems risk perpetuating assumptions or embedding biases. Insurers must establish a cyclical protocol for reviewing and updating underwriting rules, validating the accuracy of predictive models, ensuring compliance with evolving regulatory standards, and taking action to mitigate issues as they arise.

Assessing your readiness for AI

Before considering the benefits of AI-enhanced underwriting, ask: is your organization truly ready for AI? This isn't just a tech shift — it's a strategic turning point. Without the right foundation, adopting AI too soon can cause more disruption than value.



Red flags for premature adopters

Carriers must take a long, honest look in the mirror to determine whether any of the following apply:

- ✘ **Lack of data visibility**
AI is above all else a data-dependent technology. So, clean, centralized, and accessible data is paramount. A lack of investment in data technology infrastructure should be considered a red flag.
- ✘ **Systemic fragmentation**
Again, some recent investments in transformation come into play here. Fragmented legacy systems create communication and integration blockers, both of which will hinder AI implementation.
- ✘ **Gaps in expertise**
If an organization lacks internal data science expertise or a proper talent development roadmap, AI implementation may cost more and underperform relative to expectations.



Investing in a solid foundation

Conversely, organizations that can check the following boxes, are likely more prepared to tackle AI integration, and all of the challenges that accompany it:

- ✔ **Operational alignment**
Stakeholders across the entire organization are pulling in the same direction. This includes IT, data science, underwriting, legal and compliance, product strategy, and others.
- ✔ **Transformation track record**
Carriers that have already invested in digital transformation (like data technology infrastructure or digitizing customer or internal touchpoints) are better equipped to layer AI into these foundations.
- ✔ **The right oversight**
A strong governance framework is essential, as AI will necessitate model validation, bias detection, and compliance oversight, among other things.
- ✔ **Buy-in**
Equally important is executive buy-in and a realistic change management plan to prepare internal teams for the incorporation and adoption of AI tools and features.

Avoiding sketchy AI vendors

For many carriers, developing AI models in-house is impractical, if not completely out of reach. But with all the concerns covered here, how can a carrier tap into the potential of AI while also working to mitigate risk?



Find a flexible platform

Right now, the only constant with AI is that it's constantly evolving. That's true of both the underlying technology and the regulatory landscape. Look for a partner or platform that offers the flexibility to fine tune AI features to specific thresholds, or even allows carriers to completely turn off certain features if needed. Carriers must remain nimble, and a rigid platform with set-in-stone AI functionality is a risky proposition.

Look beyond AI claims

A company or vendor touting AI solutions first and anything else second should be met with skepticism. The technology is powerful but still in its infancy. Look for a provider with a more robust technology offering supplemented by AI, not the other way around.

Seek out industry expertise

Life insurance is an extremely nuanced business, full of varied product types and a complex and ever-changing regulatory environment. It's wise to build a relationship with a partner that understands those nuances — a company offering not just technical expertise, but deep knowledge of life insurance product development, as well.

Form a real partnership

A common theme when it comes to AI and life insurance technology is accountability. Between evolving regulations, ethical concerns, and maintaining the bottom line, carriers who surrender AI implementation to point-solution vendors can find themselves lacking visibility, and thus agency and accountability. To head this off, look for a technology partner with a collaborative approach instead of an out-of-the-box solution.

Conclusion

While AI's potential impact on underwriting technology is clear — improved efficiency, reduced costs, and enhanced customer experience — these gains must be matched with a steadfast commitment to fairness, transparency, and accountability. Organizations must be honest about their readiness, diligent in their choice of partners, and proactive in establishing strong governance. Short of that, carriers risk undermining the very trust that is central to everything they do.



Let's talk

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