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ACCELERATING CLAIMS PROCESSING AND PREVENTING FRAUD, WASTE, & ABUSE (FWA)

*Team Trilogy's Improved claims processing solutions
for the Federal government*

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Introduction

Trilogy Federal and Lazarus have partnered to offer the Federal government modern solutions for accelerating claims processing to prevent fraud, waste, and abuse (FWA). Together, this partnership combines the capability of Lazarus as a leading artificial intelligence (AI) lab with Trilogy Federal's deep domain knowledge of claims processing and up-to-date best practices.

In this white paper, we explore how advancements in AI may help overcome key factors of why earlier attempts have not delivered the value promised by automating claims processing. Team Trilogy describes how we may be able to help government offices responsible for claims processing, notably the Department of Veterans Affairs (VA)—(including Veterans Benefits Administration [VBA], the Veterans Health Administration [VHA]/Office of Integrated Veteran Care [IVC] and community providers) and Centers for Medicare & Medicaid Services (CMS).

Background

FWA results in spending federal dollars on services that are unnecessary, specifically:

- ❖ **Fraud** = intentional misrepresentation of information to gain undeserved claim payment
- ❖ **Waste** = unnecessary spending, misallocation, or inappropriate “blending” of resources
- ❖ **Abuse** = a questionable practice, inconsistent with accepted practices and policies

Many current FWA detection efforts rely on time-consuming manual reviews. While attempting to automate claims processing is not new, all too often FWA is still only caught on the “back-end.” In this white paper, Team Trilogy recommend strategies to *prevent* FWA. We focus on how VBA, VHA, and CMS specifically can ***prevent waste in claims processing***.

Strategic Landscape

Much of the claims processing landscape is technologically unchanged from 5 to 10 years earlier, with many government investments in capabilities like robotic process automation (RPA) or rudimentary optical character recognition (OCR) delivery providing limited mission impact compared to upfront and ongoing investment. Despite some of these advancements, **the government continues to experience waste in claims processing**, further complicated by the fact that claims packages are becoming even more detailed and data intensive over time.

With advances in leading AI capabilities (*e.g., large multi-modal models [LMMs], intelligence character recognition [ICR], and agentic orchestration models*), it is now possible to leverage unstructured claims data at scale while also delivering advanced reasoning capabilities (*e.g., chain-of-thought or mixture of experts [MoE] reasoning*) natively across platforms and information modalities.

While these advances signal a shift in the claims processing landscape with the introduction of at-scale AI systems, government leaders must be cognizant to not blindly accept the same promise that was made by other technology advancements that did not deliver enterprise value. There are several factors related to the types of models, the deployment approach, and the ability to leverage contextual knowledge that will **differentiate AI-hype from actual AI-driven**

enterprise value in claims processing. Government contracts also can be consolidated by engaging one team capable of providing an end-to-end *Intelligent* Process Automation solution to turn data and information into business intelligence insights to support decision making and launch automation tasks. We recommend leveraging cognitive technologies like AI/machine learning + workflow + analytics + triggers for RPA/task automation. Team Trilogy recommends government leaders focus on implementing solutions that ***leverage both modernized methodologies and technologies to:***

1. **Reduce pre-payment false approvals:** Shift from the old “pay and chase” method to the modern “prevent and prove” intervention strategy to mitigate wasteful spending.
2. **Reduce rework:** Introduce “what’s needed next” guidance based on AI results.
 - ***For example, workflow steps may include:***
 - 1) Get or engineer required data inputs.
 - 2) Understand the data collected.
 - 3) Assess if/how the data is inadequate.
 - 4) Issue an exam or action to complete the data needed for claims automation; and
 - 5) Decrease time until claims are ready for adjudication (decisions).
3. **Embed AI and/or automation within reengineered business processes (BPR):**
 - **Design “Cohort-Aware” Detection to Predict Claims Anomalies:** Detect unusual billing patterns (e.g., excessive procedures, duplicate claims and/or medically unnecessary services) and assign risk scores to predict fraud. AI can group like-with-like (by claim, condition, member/provider attributes, context) and flag behavior that deviates from peer norms after risk adjustment, with plain-English reasons so teams know what to fix or check/verify. This prevents abusive practices and fraudulent “ballooning of benefit claims,” which also helps improve prediction accuracy for future claims.
 - **Automate Medical Necessity Verification:** Automate cross-referencing files to determine if billing was medically necessary.
 - **Validate Patient Identities and Verify Provider Credentials:** Prevent fraudulent billing from fake providers, stolen identities, etc.
4. **Augment adjudicators and claims reviewers with targeted AI-driven insights:**
 - **Triage, pre-screen and pre-process claims:** Determine additional analysis steps that are consistent, standard, and manual today across unstructured data modalities and establish AI-driven pre-processing flows to focus review time.
 - **Provide full chains of explainability and reasoning:** AI-driven outputs come equipped with detailed chains of explainability to support human in the loop (HITL) reviewers to ensure accuracy.
 - **Adapt review processes based on emerging patterns:** Design AI solutions to provide suggestions on how to adapt review processes based on patterns.

Based on these best practice recommendations, Team Trilogy presents three case studies where we offer to apply our approaches and solutions to address real-world pain points for government.

Leveraging AI to Automate Pre- and Post-Payment FWA Investigations

From July 2019 to September 2023, VBA engaged Trilogy as the prime contractor supporting all eight divisions of Compensation Service (CS) to manage over 100 active projects, including claims processing improvement efforts. Several key projects resulted in significant wins for the client and benefiting Veterans. Specifically, we used best practice BPR methodologies, we outlined VBA field users' requirements to improve a vital claim processing resource and to empower VBA to process benefits more efficiently to approximately 350,000 Veterans and beneficiaries who receive benefits remuneration every year.

Given Trilogy's deep domain experience with claims processing at VBA, we are familiar with the numerous data sources CS leverages to process Veteran claims, (e.g., the Enterprise Data Warehouse [EDW], Corporate Data Warehouse [CDW], Prod-Test, Customer Experience Insights [CXI], among others). Team Trilogy's BPR specialists with VA domain knowledge (both technical and functional) along with data scientists familiar with VBA data can help select which process areas may be the most impactful to focus FWA prevention strategies to yield return.

Additionally—while we understand that modern AI models have the ability to increase speed, volume, and accuracy of claims processing, **Team Trilogy strongly recommends conducting process mapping and BPR before implementing stand-alone or embedded AI and/or automation solutions.** Skipping BPR and rushing straight into implementing AI and/or automation solutions introduces the following significant, potentially counterproductive risks:

1. **Automation Chaos and Scaled Inefficiencies:** Without proper process mapping and standardization, automation simply scales broken processes, leading to "faster, more expensive chaos." RPA falls short when it involves unstructured data or many variances in a process, creating expensive failures when deployed on unstandardized workflows.
2. **Technical Debt and System Failures:** RPA activities fail due to poor foundation work. Bots break on ambiguity (if humans aren't sure how the process works, how will a bot know?). Even with AI's ability to reason through ambiguity, without BPR's process clarity, undefined conditions, multiple paths and undocumented exceptions can lead to failure.
3. **Inability to Measure Success:** By skipping process mapping/BPR, it is not possible to define and measure the technology deployment's success. It may be possible to measure activity speed—but not impact. Without measurement frameworks (e.g., Lean Six Sigma), organizations accelerate the wrong things, leading to tactical wins but strategic waste.

A key issue is not only that claims data lives in different systems, but that evidence is multi-modal (i.e., includes forms, free text, imaging, codes, and attachments, etc.) and is "time-scattered" across encounters and submissions. To support accurate and timely claims adjudication and FWA prevention, business processes should be redesigned to embed AI models that integrate all systems, data sources, and data types (including multi-modal data), so

all data can be standardized. Lazarus models are pre-built to read all data formats. By beginning with BPR then leveraging Lazarus models, Team Trilogy can help move our clients more rapidly towards implementing a real-time pre-payment analysis solution that can stop fraudulent claims approvals upfront, avoiding the costly pay-and-chase methodology that exists as the default for many claims organizations.

To improve claims processing, Team Trilogy recommends selecting solutions that use:

- ❖ **First Class Connectors** to connect to systems of record using published interfaces and standards (e.g., Health Level Seven [HL7®] Fast Healthcare Interoperability Resources [FHIR®] or other application programming interfaces [API] standards common to VBA).
- ❖ **Canonical model & schema registry** to normalize structured/unstructured artifacts into model, enforce schemas and versioning so downstream logic remains stable as sources evolve.
- ❖ **Entity/ID resolution** to link Veteran, dependent, provider, facility, condition, procedure, and document IDs (deterministic + probabilistic matching) across sources (Veteran care journey/Veteran episode of care), or other types of needed cohorts to detect anomalies.
- ❖ **Aligned episode “building”** to assemble encounters, orders, results, and documentation into coherent episodes (i.e., development of medical contention building over time or medical claims building over time) and handling late arriving data/feedback.
- ❖ **Provenance/lineage of information** to persist source systems, document references, extraction methods and confidence scores so reviewers can verify any field and replay decisions.
- ❖ **Integrated open-source information** to support all-source investigative activities, including connect FWA activities to connect criminal networks and bad actors

Additionally, AI models are only effective in enterprise deployments if they are provided with the right data sources and organizational context, like policy requirements or a claims adjuster manual. Throughout deployments, we have found that organizations across sectors face a significant challenge in using and mobilizing data effectively to provide context to AI models. Traditional approaches to providing contexts to models include reinforced learning or finetuning, which is both time consuming and expensive.

To better connect organizational context to AI deployments, Lazarus developed the Vector Knowledge Graph (VKG). The VKG integrates the capabilities of a vector database to bring structure to data and a knowledge graph to map relationships between various data points. This allows deployments to augment the memory (vector embeddings) of Lazarus models to improve model contextual awareness and performance. This is a vastly enhanced approach compared to how AI models traditionally augment their knowledge, which is generally done through either fine tuning or RAG (retrieval augmented generation), allowing models to act as a member of a claims or adjudication team with high accuracy, speed, and volumes of processing.

Streamlining Claims Processing for VHA/IVC with community providers

Lazarus has focused on serving complex regulated industries (i.e., government, insurance, and financial services), with a track record of ensuring models are architected for truthfulness,

transparency and explainability first, and models are properly set-up for deployment where processing quality persists at-scale.

When evaluating AI models, Lazarus offers distinct value. For claims processing use cases, customers need AI models designed to leverage extractive-based model architecture for fact-based reasoning and analysis—and not generative AI solutions which may provide outputs that sound plausible but are factually incorrect (commonly referred to as hallucinations). Lazarus AI models deliver fact-based analysis, provide a detailed chain of explainability, and report confidence intervals so outcomes are transparent and trustworthy.

Lazarus has successfully delivered at-scale AI deployments to improve claims processing. For example, after Aflac's life and disability portfolio experienced an increased volume in claims requiring legal and medical documentation review and extraction, **Aflac implemented Lazarus' RikAI model** (an LMM) to accelerate extraction and claims processing. Aflac found RikAI to be the most accurate and highest performing model they tested. Once in production, RikAI was able to maintain 99% intake accuracy, process 10,000 forms per week, and accelerate the claims deployment process by over eight weeks. RikAI is now leveraged across 23 claims processes and has improved overall claims processing accuracy by 62%.

We achieved the above results by prioritizing the activities below. Team Trilogy would support VHA/IVC to achieve similarly successful **enterprise-level** claims processing improvements by:

- **Establishing the right methodologies upfront** to select the right models to hit desired performance and accuracy metrics
- **Developing connections to internal and external data sources** via APIs to ensure deployed models are able to execute tasks without manual data connection tasks
- **Aligning performance and accuracy metrics** to test model outputs prior to production and continuing to track key metrics during deployment and operations & maintenance
- **Curating the user experience** to support adjudicator and claims reviewer effectiveness in acting appropriately based on analysis results
- **Optimizing deployment approaches based on client context**, whether on-prem, cloud-based client managed, or fully hosted, (building on prior IT investments)
- **Providing a programmatic, non-chat inference approach** to deliver consistent, validated outputs with lower latency and high result accuracy, substantially reducing hallucinations compared with open-ended generative AI approaches.

Preventing Duplicate Billing at VA and CMS

In July 2025, [VA and CMS announced a partnership](#) to identify and recover \$106M in duplicate billing across the agencies. Team Trilogy would propose to help VA and CMS with this effort by:

1. **Ingesting** standard review manuals, rules engines, and integrate with core databases.
2. **Launching** agentic engine to detect anomalies and triage, then launch investigations.
3. **Engineering** prompts to ensure the right outcome, (based on tests against prior cases).
4. **Creating** a detailed report out – in line with previous output structures, including detailed explainability and suggestions on next steps (based on rules engine).

5. **Designing** the agentic model to detect patterns and find connected rings across cases, then dynamically feed patterns back into analysis approaches.

Final Thoughts

In the age of AI, BPR now means something different to the industry's general understanding of BPR. No longer should we be focused solely on getting rid of, refining, and streamlining processes; that is now "low-hanging fruit." In the age of AI, we are **transforming how the work is done** more efficiently by leveraging AI models with oversight from human claims adjudicators. System integration then enables the organization to perform multiple tasks or give multiple outputs from a singular process redesign. Knowing the process and desired end state means organizations can calibrate BPR and scale it back where appropriate. Leveraging advances in AI, BPR can become even more impactful as redesigned processes are now able to better handle unstructured data and anomalies.

Engaging Team Trilogy

Reasons to engage us:

- **Pairing Trilogy and Lazarus** is a unique merger of deep domain expertise and leading AI solutions, offering cutting-edge ways to reduce waste in claims processing.
- **Our team is uniquely positioned to prevent FWA**, given how we have successfully delivered impact across the healthcare, insurance and government industries.
- **Lazarus AI models support rapid prototyping.** Our AI models do not require additional training for deployment, bring low hallucination rates, and support flexible deployment approaches.

Our joint team is available to rapidly prototype a proof-of-concept to demonstrate the value of our solutions.

Contact Us

To reach Team Trilogy, please contact us at: info@trilogyfederal.com

About Us



Trilogy Federal (Trilogy) has over 15 years of Federal financial management experience—including execution on 80+ prime contracts supporting VA including financial systems development. We maintain and operate VA's core accounting Financial Management System (FMS) and are actively engaged in the Financial Management Business Transformation (FMBT) program, where we currently support systems integration, systems development, data cleansing and data conversion efforts. Additionally, Trilogy has served as the IVC office's PMO for a decade directly supporting 25 initiatives including: implementation of new IVC systems, sunseting of systems, and maintenance of claims processing systems. We have provided development support for a wide array of applications and services providing innovative financial management solutions to FSC's customers.



Lazarus AI is an artificial intelligence foundation models company serving both the public and private sector. Lazarus has extensive experience supporting many major insurers (health, life, disability, auto) on claims processing, fraud detection & prevention, and other complex activities. This includes processing 1/3 of all faxed medical records in the U.S., managing 50% of all prior authorizations in the US northeast, and applying capabilities from OCR to advanced models for reasoning and orchestration to solve complex challenges. Lazarus also brings deep experience supporting the Department of Defense, the US Intelligence Community, and Federal Civilian agencies on mission critical efforts. Lazarus models and capabilities were uniquely developed to serve highly sensitive, regulated industries, with trust and transparency built into everything we deploy.

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