

# Revolutionizing Prior Authorization with Gen AI-powered clinical intelligence



# Introduction

A leading U.S. healthcare organization and Integrated Delivery Network (IDN), recognized as one of the largest individual health insurers in the country, partnered with CitiusTech to transform its Prior Authorization (PA) process. The client had previously developed an AI-powered decision support tool for benefit verification, but it struggled with complex PA workflows. To address these limitations, the client collaborated with CitiusTech to explore the integration of Generative AI (Gen AI) technologies aimed at enhancing automation, accuracy, and scalability in PA operations.



# Business challenge

## Manual bottlenecks and clinical complexity hamper PA efficiency

Despite having a foundational AI tool, the client faced several operational and clinical challenges in its PA process:

- High time investment by PA urses: Nurses spent 30–45 minutes per case due to manual data extraction and review, limiting daily throughput and delaying patient care.
- Complexity of clinical rules: Clinical decisions involved intricate logic, including nested conditions and side-specific criteria, making automation difficult.
- Inconsistent quality of scanned charts: Variability in chart resolution and format led to OCR errors, compromising data accuracy and context.
- Incomplete or inaccurate summaries: Inadequate summaries resulted in re-authorization, compliance risks, and reduced trust in automation.



# The solution

## Gen AI-powered automation transforms clinical decision support

CitiusTech implemented a Gen AI-powered solution in two phases, focusing on clinical summarization, rule codification, and decision support:

- Curated policy rules with SME input: Developed comprehensive rules for HCPCS and CPT codes in collaboration with clinical SMEs.
- LLM-powered rule interpretation: Used Large Language Models (LLMs) to extract and interpret complex clinical rules, automating logic parsing.
- Iterative validation with SMEs: Conducted multiple validation rounds to refine rules and ensure clinical relevance.
- Gemini LLM-generated clinical summaries: Created case-specific summaries for 50 PA cases, reducing manual effort and improving consistency.
- Evidence mapping with page-level references: Linked clinical evidence to rules with traceable references, enhancing transparency and audit readiness.
- AI-driven recommendations with justification: Delivered approval/denial decisions with clear reasoning, boosting trust, and decision speed.





# Benefits

From 30 mins to 12 mins: A leap in review efficiency and accuracy

The Gen AI initiative delivered measurable improvements and strategic value:

**84%**

of AI-generated summaries met or exceeded the “Good” quality benchmark.

**100%**

alignment with SME-curated rules ensured clinical accuracy.

**~60%**

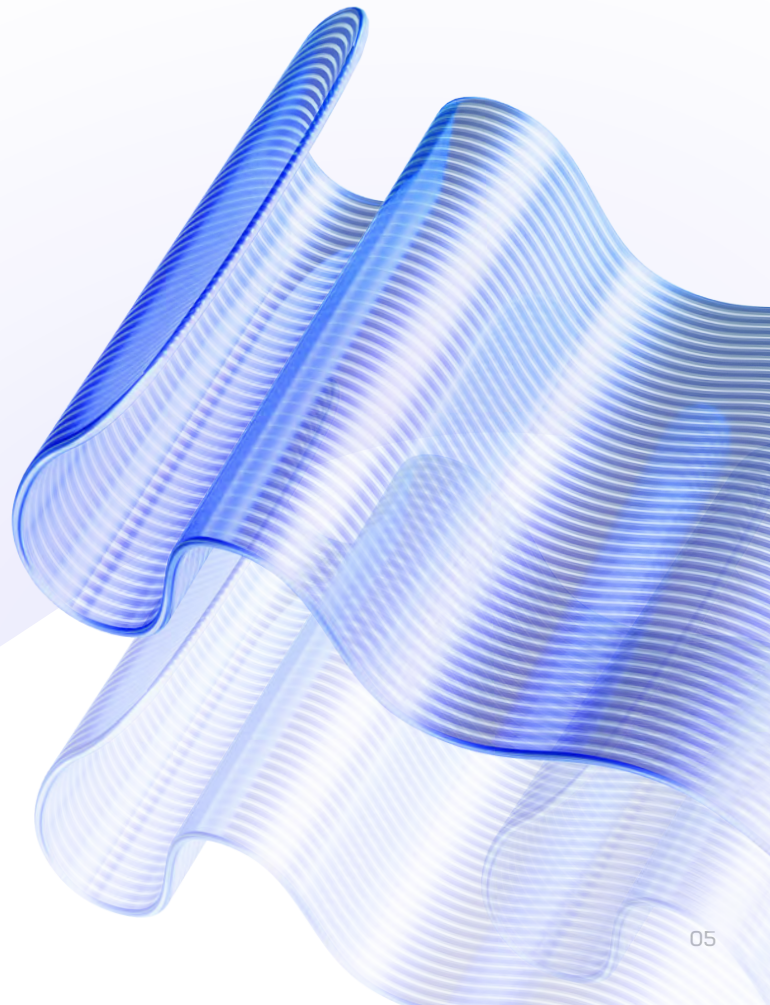
reduction in review time, from ~30 mins to 12 mins per case.

**~720%**

nurse-hours saved annually, optimizing resource allocation.

Accelerated decision-making through transparent AI recommendations.

Catalyst for innovation, enabling future use cases in Fraud, Waste & Abuse (FWA) detection and Program Integrity (PI).



## About CitiusTech

CitiusTech is a global technology services, consulting, and business solutions enterprise 100% focused on the healthcare and life sciences industry. We enable 140+ enterprises to build a human-first ecosystem that is efficient, effective, and equitable. Leveraging deep domain expertise and next-generation technologies, including AI, Cloud, Data, and Intelligent Automation, we assist our clients to realize their vision, accelerate transformation, and achieve business outcomes. With 7,700+ healthcare technology professionals worldwide, CitiusTech powers digital innovation, business transformation, and industry-wide convergence through next-generation technologies, solutions, and products. Follow CitiusTech on Twitter or LinkedIn.

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