



# **AI & Automation in 2024**

## Appeals to Denial Prevention



**Roy Lewis** – Advocate Health  
**Jonathan Benton** – Advocate Health  
**Jeff Means** – Long Tail Health Solutions



## **Roy Lewis**

### **Advocate Health**

Roy Lewis is an Enterprise AVP of Revenue Cycle Technology, Quality, and Business Support for Advocate Health, headquartered in Charlotte, North Carolina. He has had vast experience in Revenue Cycle performance including Registration, Billing, Rev Cycle Training, Process Optimization and Analytics. He is passionate about creating and implementing new ideas to enhance revenue cycle operations.





## **Jonathan Benton**

### **Advocate Health**

Jonathan Benton is an Enterprise AVP of Denial Avoidance for Advocate Health, headquartered in Charlotte, North Carolina. He has 20 years of experience in Revenue Cycle focused on Hospital and Physician Billing. He is passionate about denial analytics, prevention, and strategy.





# Jeff Means

## Long Tail Health Solutions

Jeff is co-founder and CEO of Long Tail Health Solutions. He is an entrepreneur with expertise in healthcare revenue cycle management (RCM), product development, operations management, and the application of the combined traditional and modern technology stack to harvest incremental revenue and cost performance in healthcare administration.

Jeff is a graduate of the United States Military Academy (West Point) with a BS in foreign languages. Jeff also has an MBA from the University of Chicago (Booth). Jeff lives in the Chicago suburbs with his wife Carissa and children Lucas (15) and Lindley (11). Jeff is a veteran, serving in the war on terror in Southwest Asia and Africa.





# What Will We Learn

AI Basics

Automation Gain

Current State of AI

Use Case Evaluation

Lesson Learned



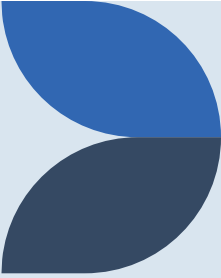
# Problem Statement

Healthcare organizations have invested in automation for years

– HOWEVER –

most automation initiatives have delivered less ROI than expected.

# Why is scaling difficult?



- Process and case variation
  - Exception handling
- Integration to adjacent processes
  - Systems integration
- Data quality and availability

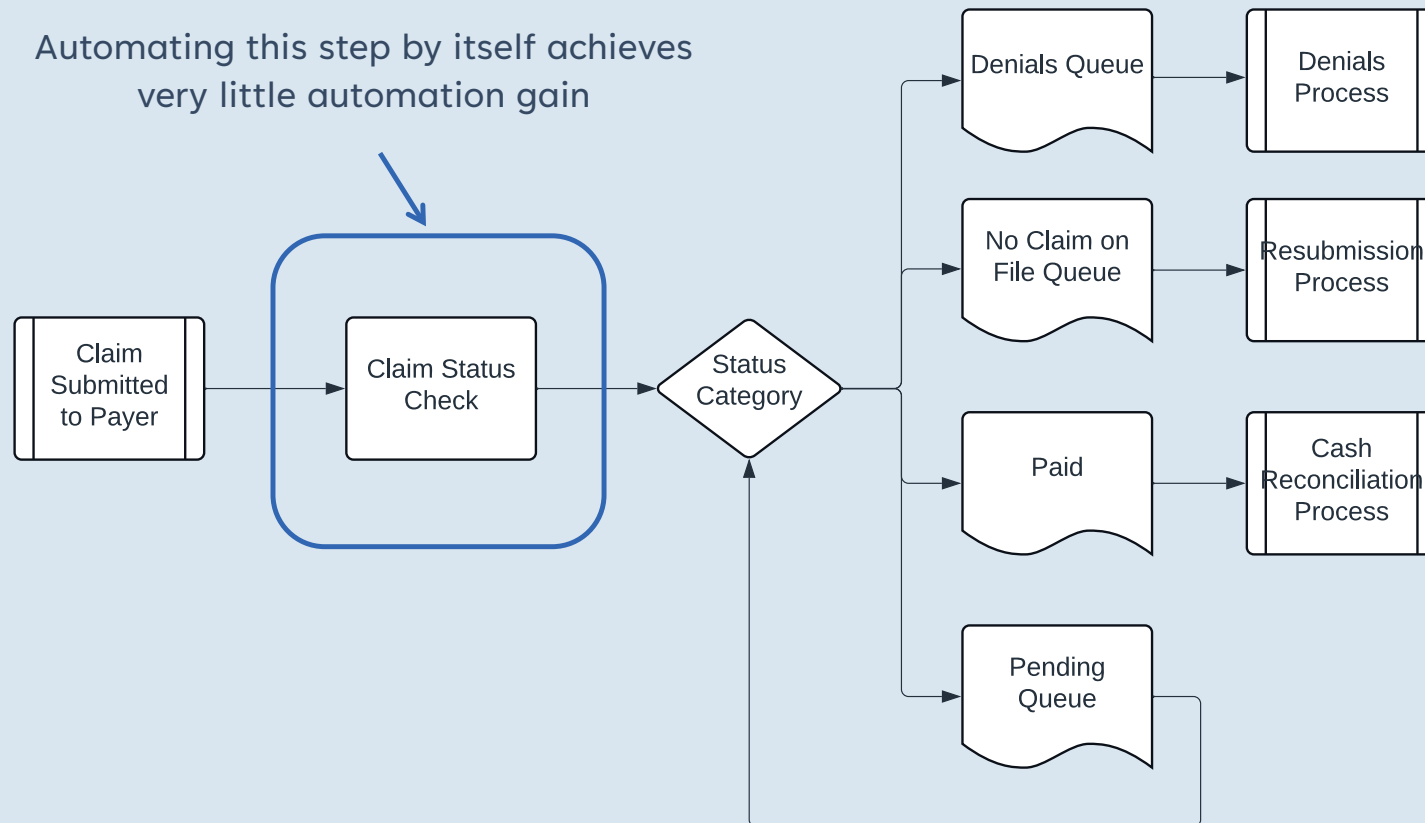
# Automation Gain is the Goal

***“Automation Gain”*** is the realized labor savings harvested from the automated activity



# Use Case #1: Claim Status Checking

Automating this step by itself achieves very little automation gain



# Modern Automation Toolkit

Predictive Analytics & Machine Learning

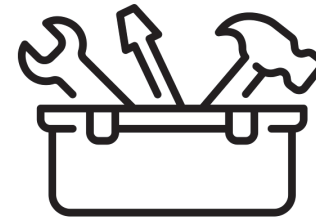
Generative AI

Robotic Process Automation

Business Rules Management

Systems Interfaces (APIs)

Business Intelligence



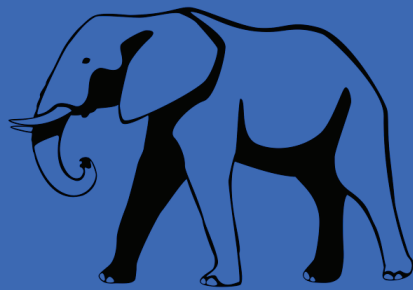
# Large Language Models (LLMs)

An LLM is a neural network, trained on massive amounts of text data, that identifies the patterns and relationships between words, phrases, and sentences.

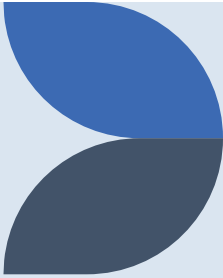
- ✓ Predicts the next word(s) or phrase(s) in sequence
- ✓ Translates between languages
- ✓ Creates summaries and responses
- × Does NOT ***understand*** the meaning of language

Artificial intelligence is ***simulation*** of human intelligence using computer systems

How do you ...



# Task evaluation framework



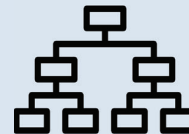
Sequence



Business Rules  
Matrix



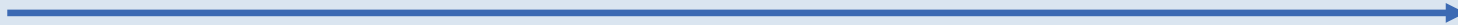
Decision Tree



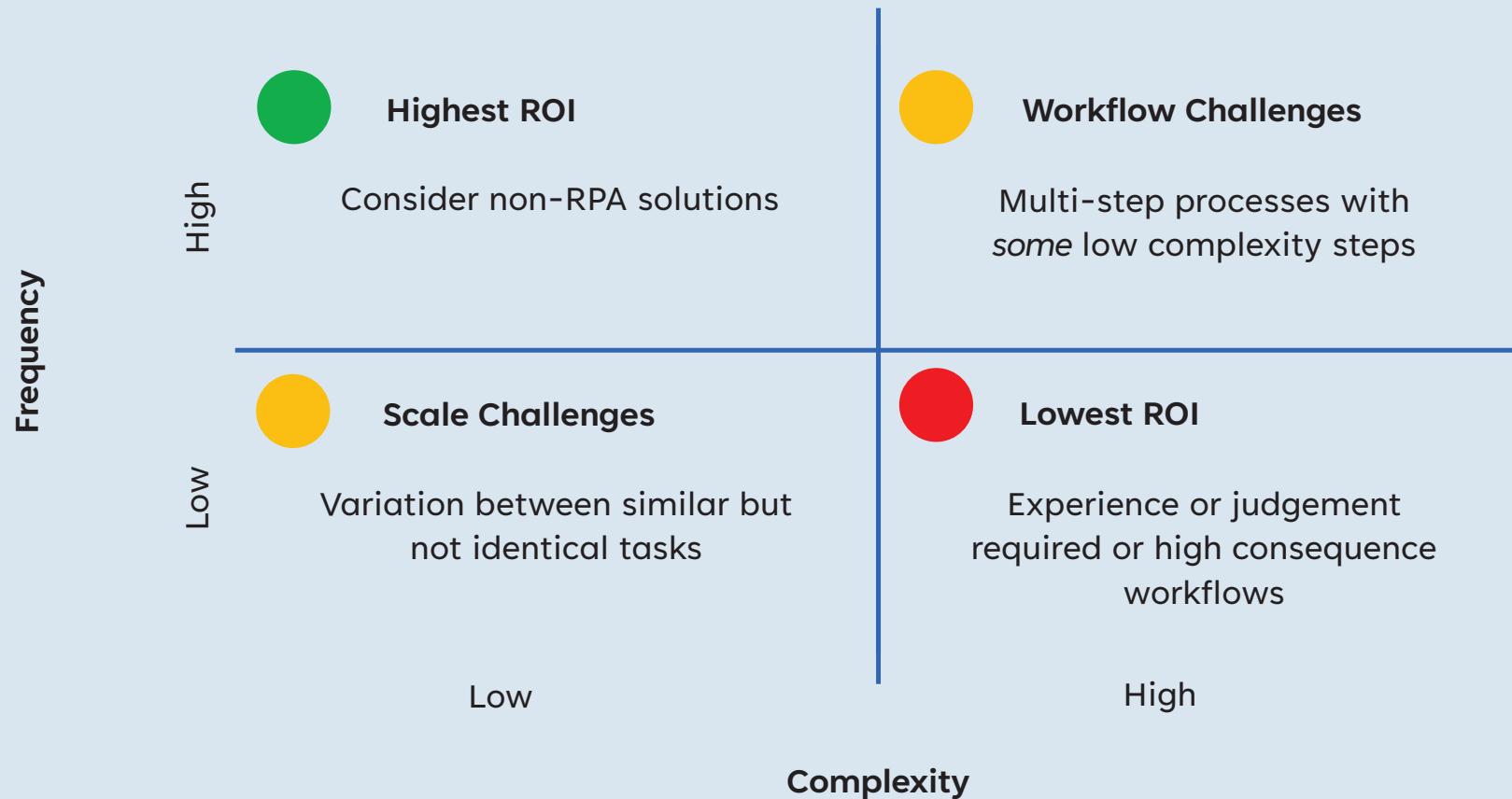
Cognitive  
Decision



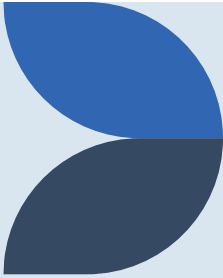
COMPLEXITY



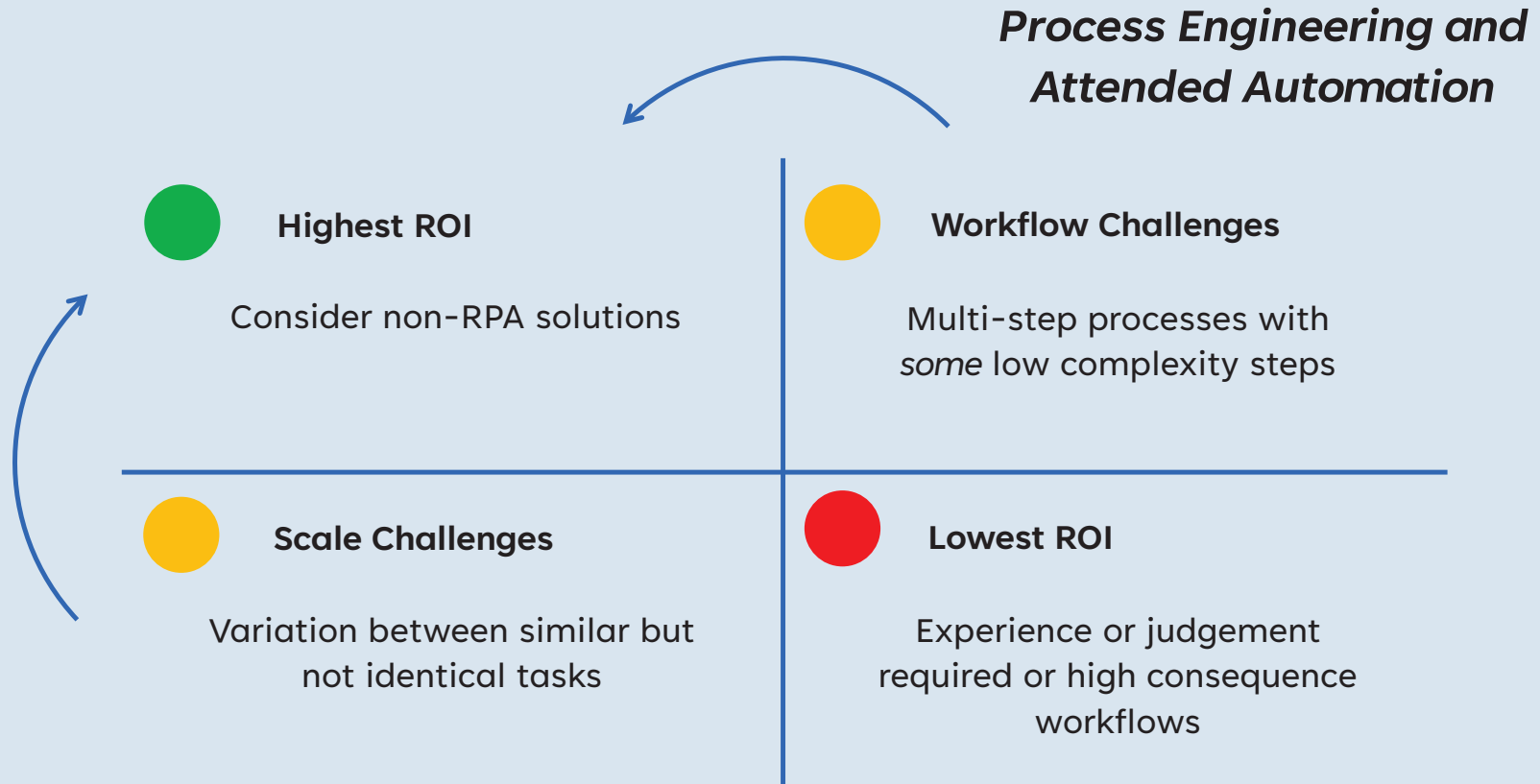
# Use Case Evaluation



# Use Case Evaluation



*Classification and  
Decision Support*

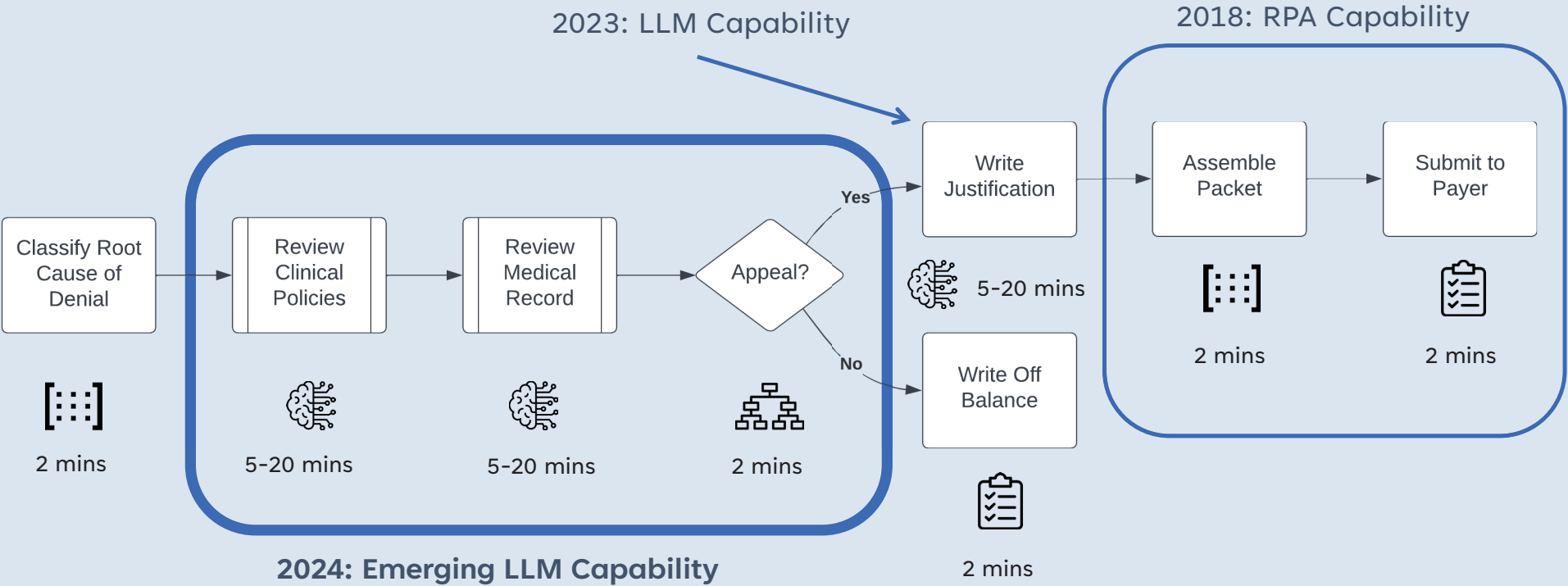


## Use Case #2: Clinical Appeals

- Use case with very high ROI and relatively high volume
- Half of the steps have low complexity
- Many steps that require data hand offs
- Several steps with high complexity decision-making
- With investment, the complex steps can be commercialized
- Expected automation gain: 20 mins



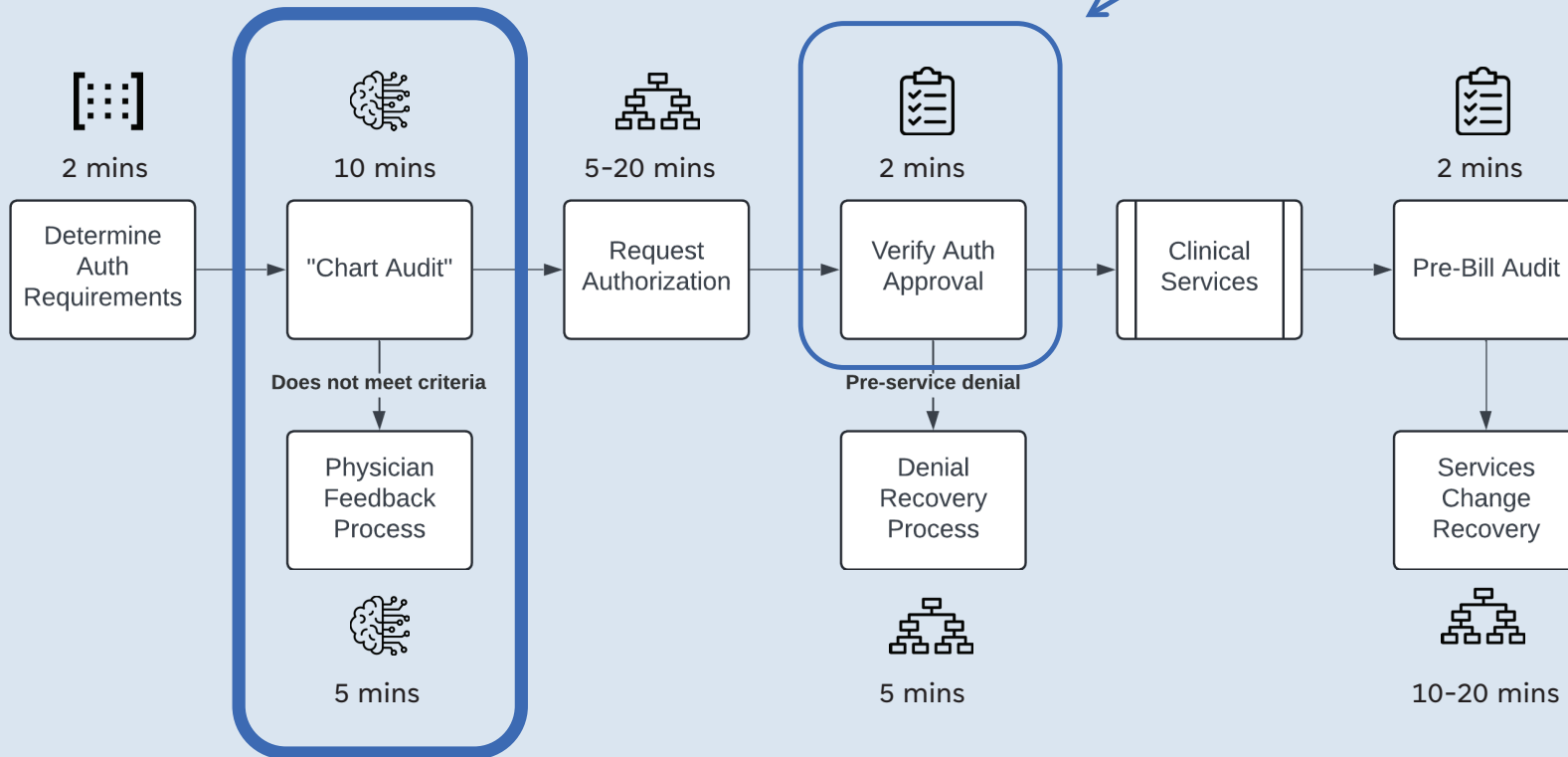
# Use Case #2: Clinical Appeals



# Use Case #3: Prior Authorization

Emerging LLM Capability

RPA Vendor Focus



## Additional Use Cases

- Patient Type Status Determination
- Concurrent Review / In House Denials
- Care Plan Submission
- Care Gaps
- Outbound Scheduling
- Appointment Reminders/Instructions
- COB/Eligibility Denials
- Medical Records Exchanges



# Payers and AI - Discussion

## ① What are Payers' incentives to use AI?

- How can this help/hurt patients?
- Are these incentives aligned with Providers?
- How much are Payers investing in AI vs. Providers?

## ② How will Provider use of AI impact Payers?

- Would “unlimited appeals” de-incentive denials?
- How can Providers match “AI with AI”?
- How can this impact contract negotiations?

## ③ What experiences or concerns do you have?

### Advocate Health Example:

“It was eye-opening. The variation in medical determinations, the misapplication of Medicare coverage criteria – it just didn’t feel like there [were] very good quality controls.”  
– Dr. Brian Moore (Advocate Health)

*Denied by AI: How Medicare Advantage plans use algorithms to cut off care for seniors in need; STAT, March 13, 2023*





# Today's Takeaways

- Break tasks into the smallest components
- Optimize the process ***first***, then automate
- Use the best tool for each task
- ***Solve*** for the limitations of your tools
- First solution is probably not the final
- Log ***everything***



**Thank you**

