FIVE PRACTICAL WAYS EMBEDDED AI IS RESHAPING REVENUE CYCLE MANAGEMENT

From Reducing Friction to Accelerating Reimbursement

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Speakers

Jeff Carmichael
Senior Vice President, Engineering
XiFin, Inc.

Jeff's engineering leadership spans more than 20 years and encompasses networking, security, and Healthcare software and systems. He brings a career-long focus on data-driven insights and prediction through advanced data modeling across several industries.

Before joining XiFin, Jeff led worldwide software development for the network and security division of LSI Corp. He has held senior-level leadership positions at several successful startups and divisional leadership positions at Intel.

Sandra Greefkes
Vice President of Product & Partner Marketing, XiFin

Sandra Greefkes leads the product and partner marketing team at XiFin, Inc. and has more than 20 years of experience helping business, public sector and healthcare leaders learn how they can leverage digital transformation strategies for competitive differentiation and to increase profitability.

Overview
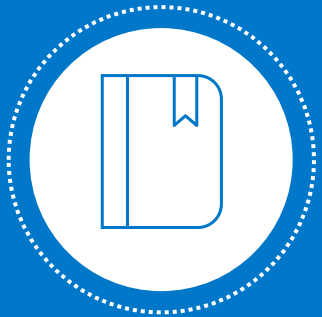
The Foundation of Analytics, Automation, and AI

Confidence and Contemplation: Where are your peers?

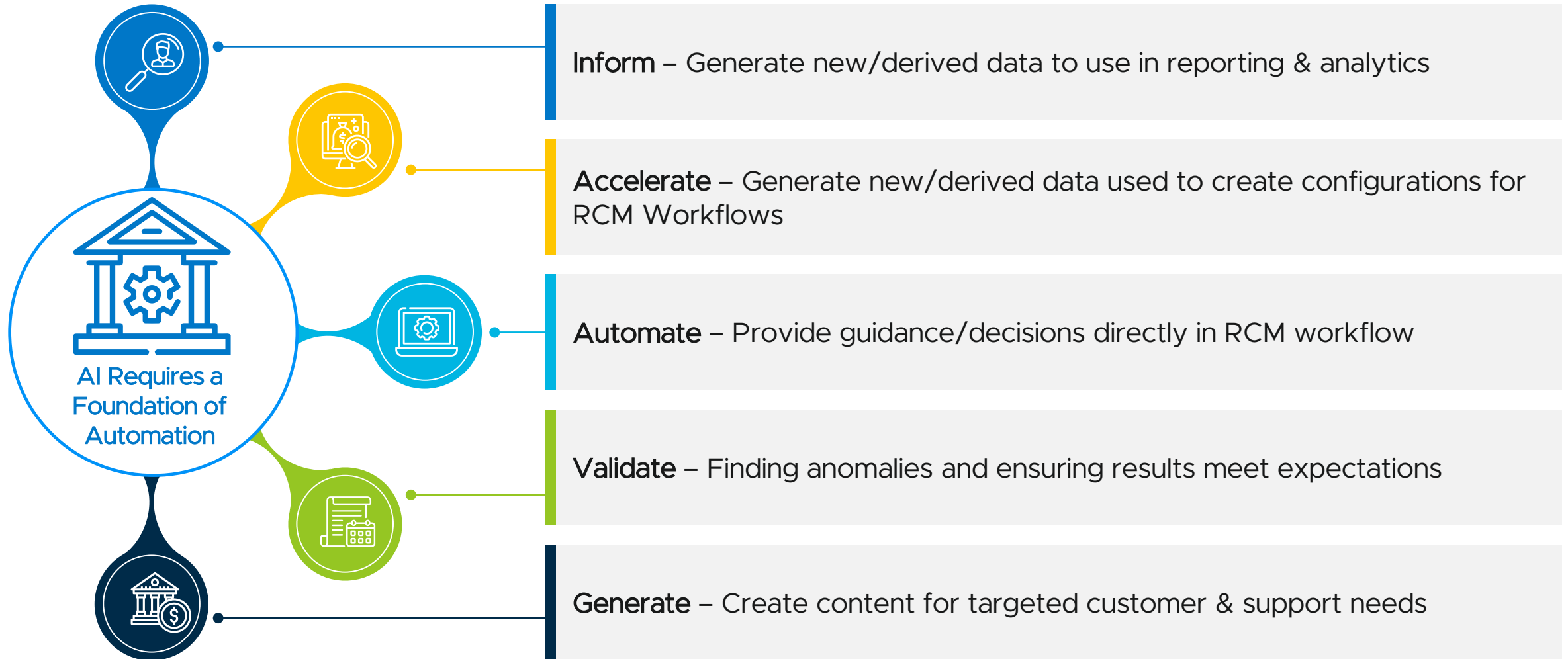What is the Path to Getting the Most Value from AI Initiatives?

Five Ways AI is Reshaping RCM

Future-Ready Infrastructure and the Importance of AI Transparency

Assessing Organizational Skills Sets, Expertise, and Technology

What You Can Do With AI

AI alone doesn't solve problems. AI may not be the solution.

AI Requires a Foundation of Automation

Inform – Generate new/derived data to use in reporting & analytics

Accelerate – Generate new/derived data used to create configurations for RCM Workflows

Automate – Provide guidance/decisions directly in RCM workflow

Validate – Finding anomalies and ensuring results meet expectations

**Generate** – Create content for targeted customer & support needs

Robotic Process Automation vs. AI

RPA (Process Driven)

- RPA is a rule-based software engine that has no intelligence and automates repetitive tasks.

- RPA has a software robot that mimics human actions, whereas AI is concerned with the simulation of human intelligence by machines.

Three Kinds of Relevant AI (Data-Driven)

1 Machine Learning

2 Natural Language Processing
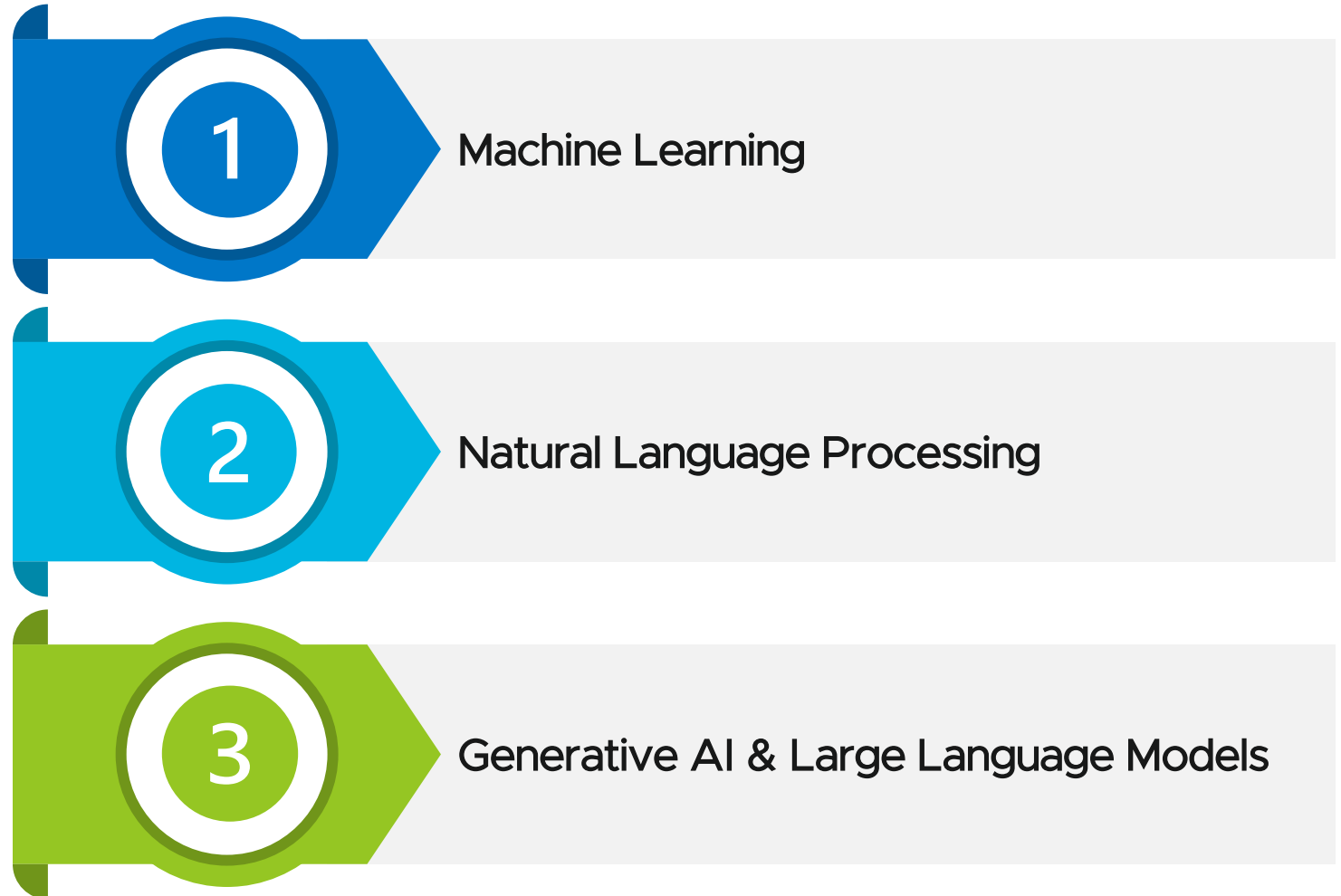
3 Generative AI & Large Language Models

BALANCING RISK & REWARD
OF GENERATIVE AI

What is your confidence in AI for RCM? Do you trust it?

A. No, AI is too risky
B. No, RCM is too complicated
C. Mixed, I need to be convinced
D. Yes, we are testing AI
E. Yes, we are all in on AI

Answer Options	143 Responses via HFMA Webinar	75 Responses via Dark Webinar
No, AI is too risky	1.4%	N/A
No, RCM is too complicated	2.8%	1%
Mixed, I need to be convinced	75.5%	69%
Yes, we are testing AI	16.8%	19%
Yes, we are all in on AI	3.5%	11%

Are You Contemplating or Using RPA / AI for RCM?

a) We are not contemplating using AI for RCM

b) We are planning to use AI for RCM

c) We use Robotic Process Automation

d) We use Machine Learning or Natural Language Processing
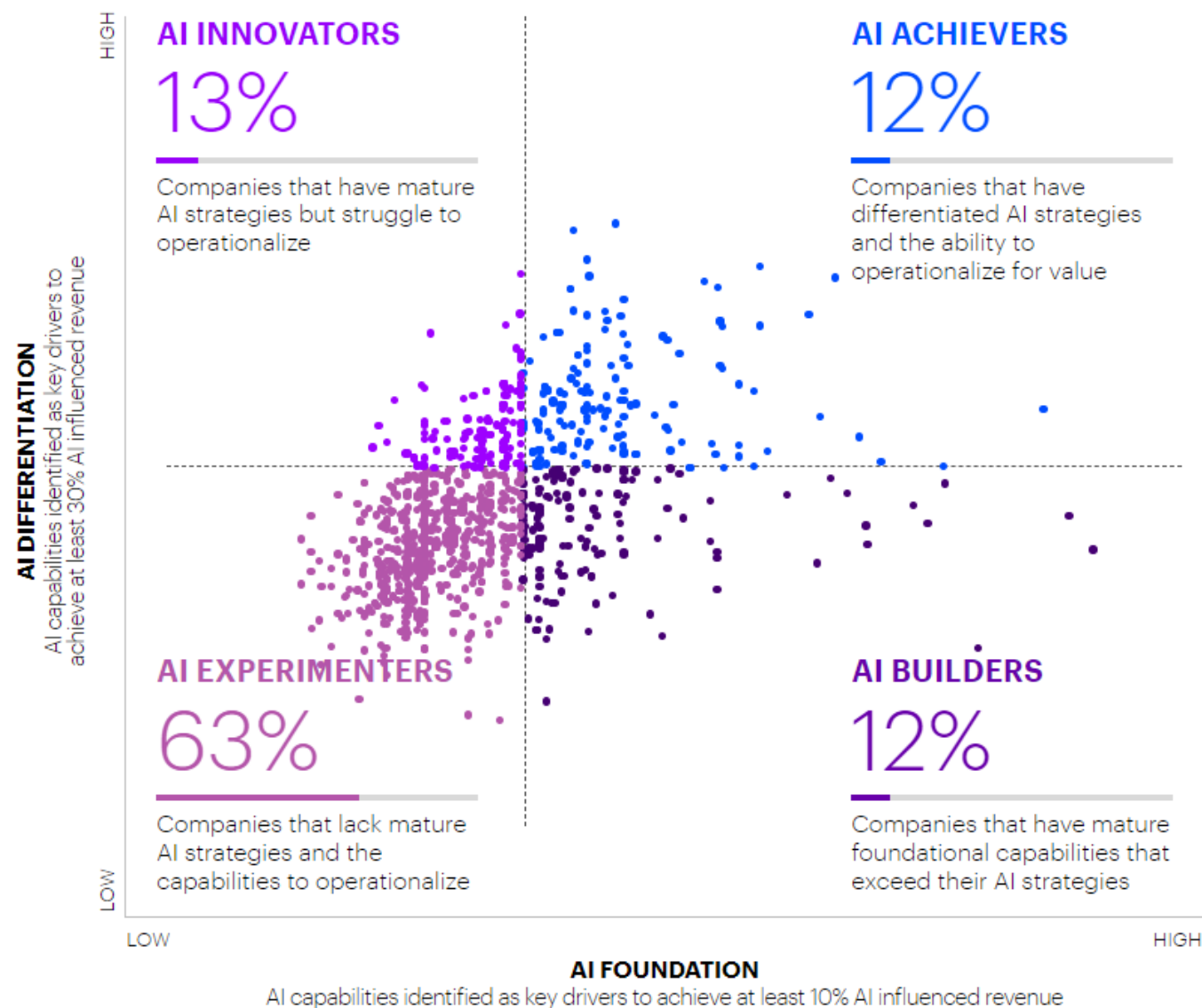
e) We use Generative AI – Large Language Models

Answer Options	75 Responses via Dark Webinar
We are not contemplating using AI for RCM	15.1%
We are planning to use AI for RCM	17.7%
We use Robotic Process Automation	10.7%
We use Machine Learning or Natural Language Processing	3.7%
We use Generative AI – Large Language Models	1.8%

Data-to-AI Continuum

All Industries, Company Sizes, Region

An organization's journey can be charted against a maturity model that encompasses these dimensions:

- Strategy and governance
- Architecture
- Development
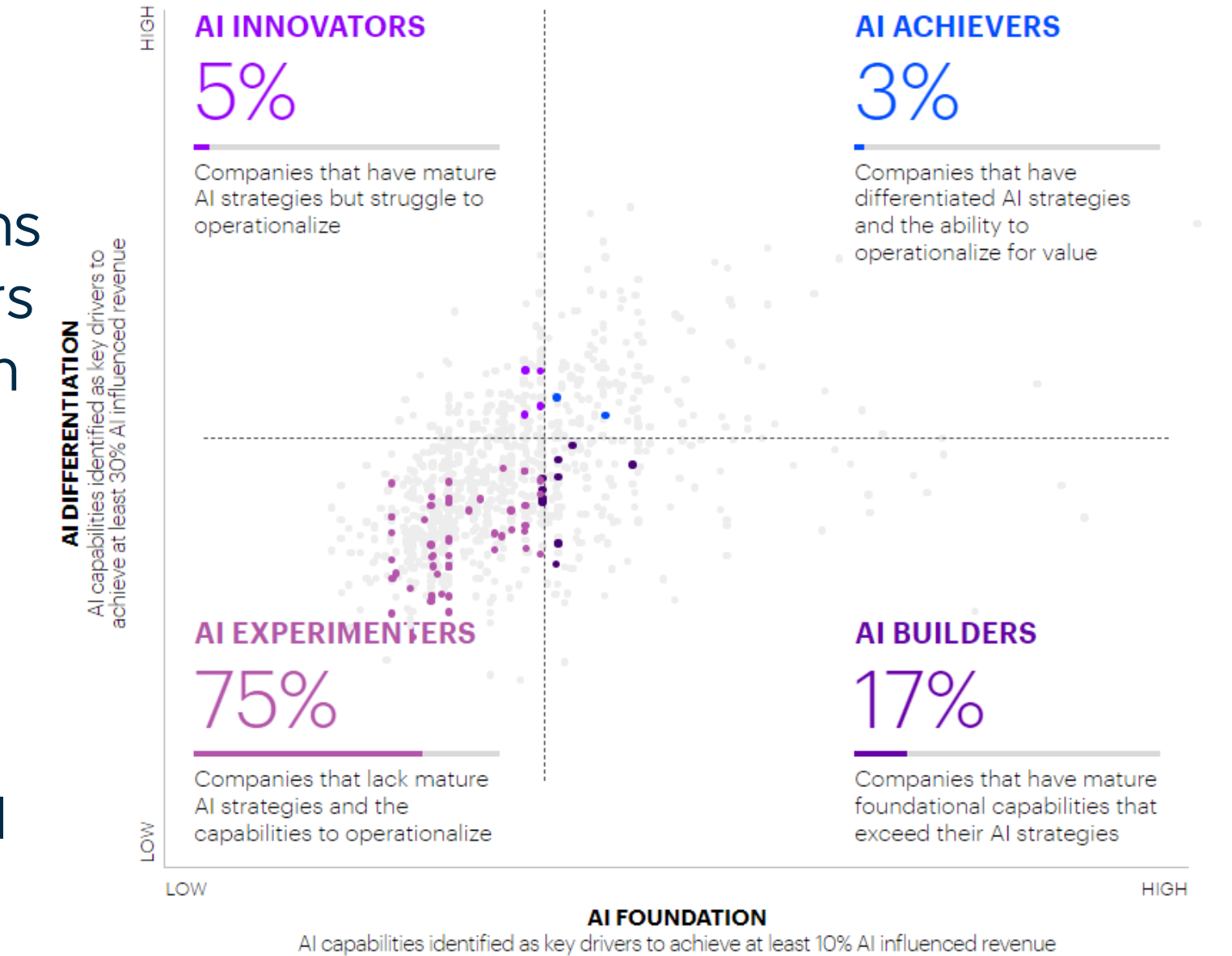- Regulation and ethics
- User support

AI INNOVATORS
13%
Companies that have mature AI strategies but struggle to operationalize

AI ACHIEVERS
12%
Companies that have differentiated AI strategies and the ability to operationalize for value

AI EXPERIMENTERS
63%
Companies that lack mature AI strategies and the capabilities to operationalize

AI BUILDERS
12%
Companies that have mature foundational capabilities that exceed their AI strategies

AI DIFFERENTIATION
AI capabilities identified as key drivers to achieve at least 30% AI influenced revenue

HIGH · LOW

AI FOUNDATION
AI capabilities identified as key drivers to achieve at least 10% AI influenced revenue

LOW · HIGH

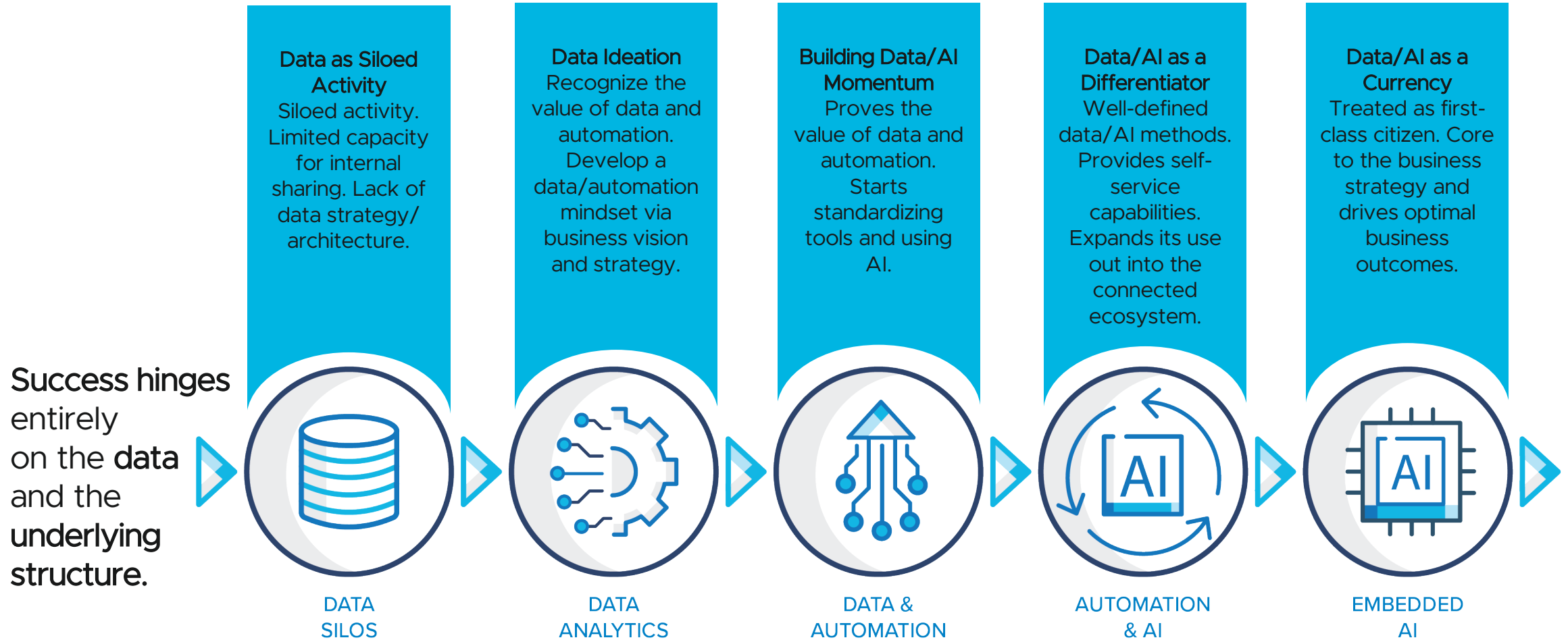# Data-to-AI Continuum

Healthcare

- Healthcare organizations tend to be late adopters of digital transformation tech for administrative purposes

- Healthcare SaaS vendors who are AI mature can offer their customers access to AI at scale

AI DIFFERENTIATION
AI capabilities identified as key drivers to achieve at least 30% AI influenced revenue

HIGH

AI INNOVATORS
5%
Companies that have mature AI strategies but struggle to operationalize

AI ACHIEVERS
3%
Companies that have differentiated AI strategies and the ability to operationalize for value

AI EXPERIMENTERS
75%
Companies that lack mature AI strategies and the capabilities to operationalize

AI BUILDERS
17%
Companies that have mature foundational capabilities that exceed their AI strategies

LOW

LOW   HIGH

AI FOUNDATION
AI capabilities identified as key drivers to achieve at least 10% AI influenced revenue

Source: https://www.accenture.com/_acnmedia/pdf-83/accenture-becoming-data-driven-enterprise-data-industrialization.pdf

The Journey Toward Data, Automation, and AI Supremacy

Where is your laboratory? What is the plan to accelerate your AI maturity?

Success hinges entirely on the **data** and the **underlying structure.**

Data as Siloed Activity	Data Ideation	Building Data/AI Momentum	Data/AI as a Differentiator	Data/AI as a Currency
Siloed activity. Limited capacity for internal sharing. Lack of data strategy/architecture.	Recognize the value of data and automation. Develop a data/automation mindset via business vision and strategy.	Proves the value of data and automation. Starts standardizing tools and using AI.	Well-defined data/AI methods. Provides self-service capabilities. Expands its use out into the connected ecosystem.	Treated as first-class citizen. Core to the business strategy and drives optimal business outcomes.

DATA SILOS → **DATA ANALYTICS** → **DATA & AUTOMATION** → **AUTOMATION & AI** → **EMBEDDED AI** →

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A Simple Example of Payor's Marketing Teams Impacting Your RCM...

Those little icons on your insurance card

- ❖ RCM Data is complicated.

- ❖ Dirty or unstructured data leads to unintelligent AI.

- ❖ Applying analytics to RCM derives actional and understanding insights.

- ❖ It identifies problematic data models and forces optimal data structures.

- ❖ AI success depends on data quality and training models and approaches.

Step-by-Step View of the Lifecycle of a Claim
Automation Demands Purpose-built Data Modeling, Logic, and Interoperability
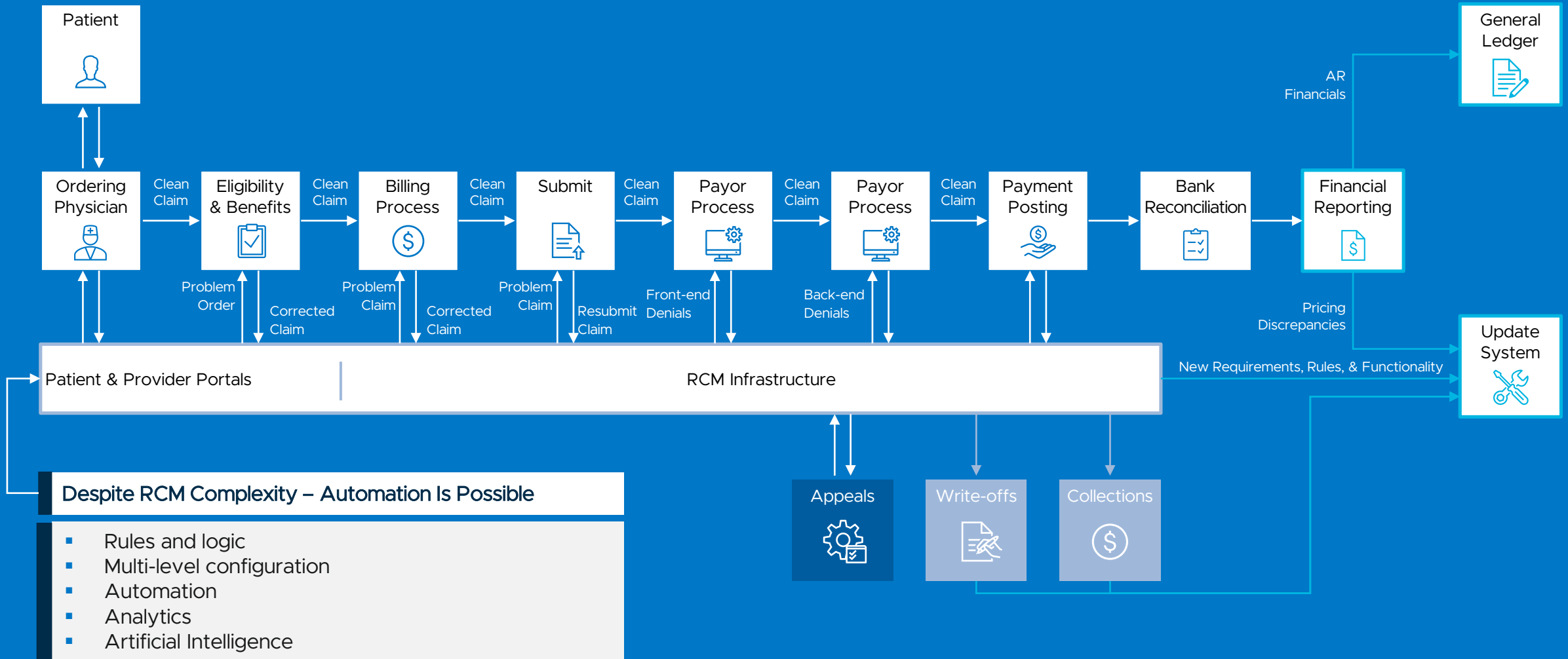
Despite RCM Complexity – Automation Is Possible

- Rules and logic
- Multi-level configuration
- Automation
- Analytics
- Artificial Intelligence

Embedded AI: Applications Throughout the Billing Process

1 Capturing Third-Party Insurance

2 Accurately Calculating Patient Responsibility Estimates

3 Managing Negotiated Rates and Expect Pricing

4 Simplifying Interactions with Payors and Translating Payor Responses into Actionable Next Steps

5 Exception Processing – Likelihood of Claim Reimbursement and Prioritization of Errors to be Addressed
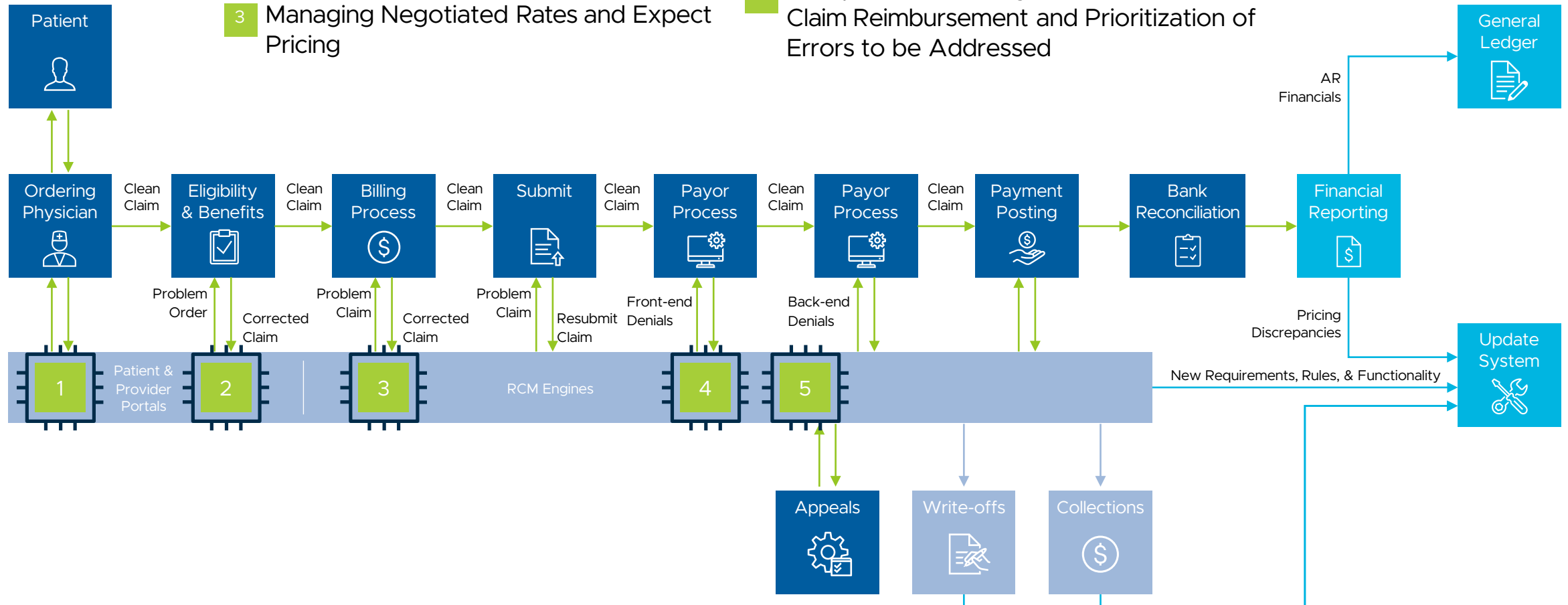
Insurance Information Required from Patients is Extensive

Reading the insurance card and hunting for the information being requested

But It Doesn't End With Getting The Right Payor Name

Payor Discovery AI and Automation

- Subscriber ID not sufficient for eligibility, benefits coverage determination or patient estimation
- AI removes the onus on the patient and the physician by uncovering the underlying payor details.
- OCR can interpret the insurance card
- AI can discover the RCM payor plan details for that claim so that it can be processed without manual intervention.

Removing Friction From the Patient Experience
Simplifying Patient Input and Eligibility Verification Using AI
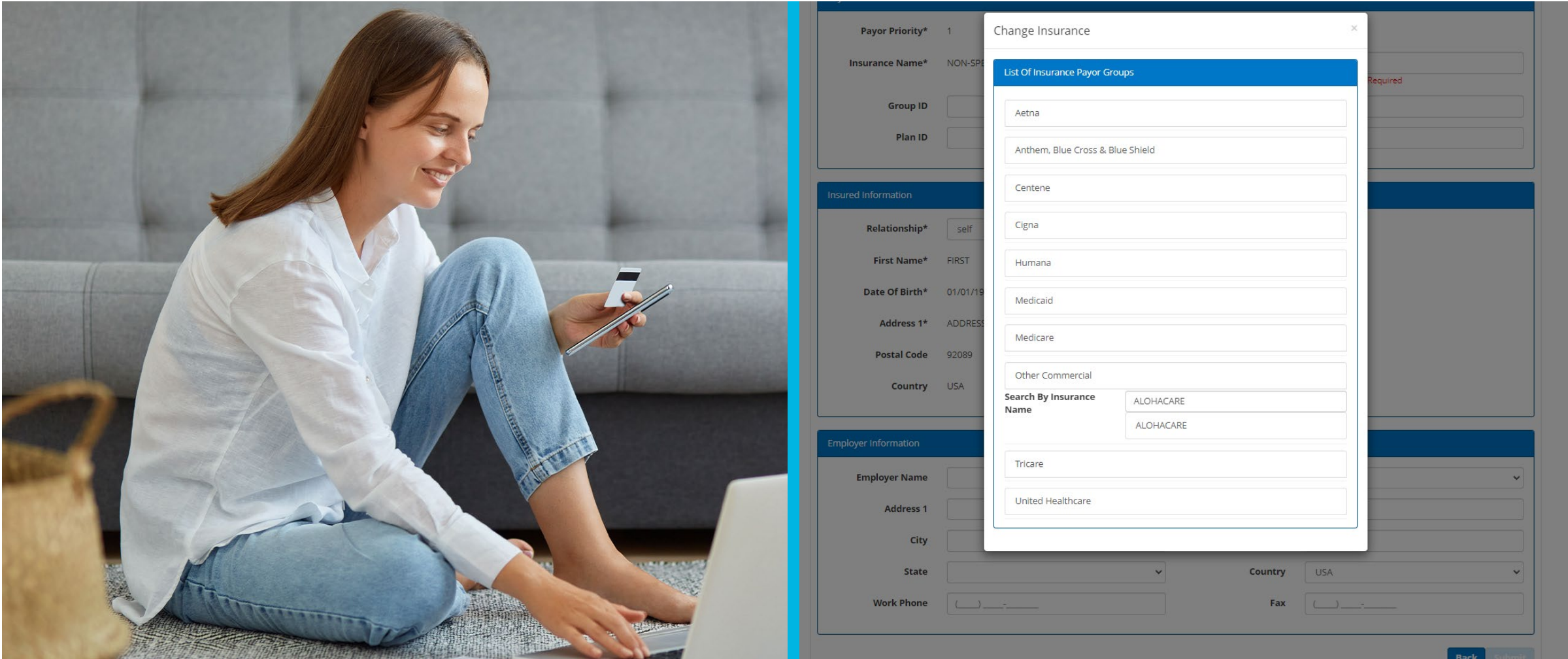
AI Uncovers the Insurance Information
Minimal Information Capture or Card Image Upload Completes the Process

✔ Insurance Information Verified

We received the following information from your insurance company:

Payor Information

Insurance Name:	TRICARE EAST
Effective Date:	03/12/2020
Subscriber ID:	ZLF150095158
Plan Name:	TRICARE SELECT ACTIVE DUTY FAMILY MEMBER
Patient Name:	ARANKA RADOSAVCEV
Date of Birth:	11/06/1956
Gender:	FEMALE

Insured Information

Relationship:	SELF
Name:	ARANKA RADOSAVCEV
Date of Birth:	11/06/1956
Gender:	FEMALE

[Cancel]   [Confirm]

Need Help?

If the insured information is incorrect, please contact your insurance company to update in their system.

Once your insurance company has your updated information, please return to this screen to update the insurance we have on file for you.

AI maps the payor eligibility response data to the appropriate RCM payor plan/fee schedule

Patient Responsibility Estimation

Predicated on receiving complete and accurate information back from the payor and having the appropriate expect amount on record

Must consider relevant provider-specific pricing information, test or procedure information, and real-time eligibility to determine patient responsibility amount.

Provides an estimate of what should be collected from the patient at the time of service or at the time of order.

Estimated Responsibility

Estimation Information

Patient Name	Date of Birth	Total Due
WINNIE POOH	01/01/1990	$449.00

Hide Detail ▾

Accession Information
Accession ID: 1323724

Insurance Information
Name: WINNIE POOH
Date Of Birth: 01/01/1990
Gender: MALE
Relationship: SPOUSE
Payor ID: CASH
Subscriber ID: 987809459

Order Information
Date of Service: 05/16/2021
Client ID: 06074

Ordered Test
4722 - CDH1 specific site analysis
5555 - Specific site analysis

Estimated Patient Responsibility: $449.00
Amount paid: $0.00
Total Due: $449.00

Procedure Code	Bill Price ($)	Expect Price ($)	Annual Deductible ($)	Remaining Deductible ($)
99999	249.00	249.00	0.00	0.00
81403	200.00	200.00	0.00	0.00
Total	449.00	449.00	-	-

Procedure Code	Deductible ($)	Copay ($)	Coinsurance (%)	Coinsurance ($)
99999	0.00	0.00	0.00	0.00
81403	0.00	0.00	0.00	0.00
Total	0.00	0.00	-	0.00

Disclaimer: The above pricing is an estimate for today's date, it is subject to change in future.

Please contact ACME at 858-777-5555 if you would like to discuss the estimate or cancel testing.

Pay Now

PRINT

Patient Responsibility

Payor Updated Demographic Data	Subscriber ID	A10001
Estimation Status	Pending Review	
Estimated Patient Responsibility	45.95	View Eligibility Response Make Payment
Patient Responsibility Accepted	☐	
Estimation Note		

Details (1)

	Procedure Code	Units	Bill Price ($)	Expect Price ($)	Mod1	Copay ($)	Coinsurance (%)	Coinsurance ($)	Deductible ($)	Remaining Deductible ($)	Annual Deductible ($)
1	81235	1	750.00	324.58		0.00	10	30.95	15.00	15.00	5,000.00
			750.00	324.58		0.00		30.95	15.00		

Edit

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Patient Estimation: Why Eligibility Info Isn't Enough

Provider network status is not determined

Generalized to Service Type:
- Very few procedure-/service-level responders
- Coverage limitations not considered

Multiple and conflicting/overlapping service-type benefit descriptions.
- 43 different potentially applicable coinsurance benefit loops
- 3 different potentially applicable values
- None matched what was actually adjudicated

Rules are complex, differ from payor to payor, and don't always get to a unique result that will match adjudication.

Machine Learning Models trained on recently adjudicated claims can overcome these challenges and provide accurate:
1. Expected Allowed Amount
2. Estimated Copay
3. Estimated Coinsurance
4. Risk of Coverage Limitations

Embedded AI: Applications Throughout the Billing Process

1. Capturing Third-Party Insurance
2. Accurately Calculating Patient Responsibility Estimates
3. Managing Negotiated Rates and Expect Pricing
4. Simplifying Interactions with Payors and Translating Payor Responses into Actionable Next Steps
5. Exception Processing – Likelihood of Claim Reimbursement and Prioritization of Errors to be Addressed

Practical Workflow Applications

- Analytics drive early insight to changes in payor behavior
- Address root causes, adjusting workflow as needed to eliminate errors or automate appeals
- RCM platform support for algorithms or AI drives efficient automation of workflow adaptation to payor changes

Billing Process

Negotiated Rates and Expect Pricing

- An accurate picture of expected payor reimbursement is critical to many RCM and financial functions.

- Contracted and non-contracted health plans.

- Are you receiving the appropriate reimbursement?

- ML-based historic data modeling can assist with determining expected reimbursement.

- Results may be driven into RCM configuration or determined in-line within the workflow.

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Patient

General Ledger

Ordering Physician — Clean Claim → Eligibility & Benefits — Clean Claim → Billing Process — Clean Claim → Submit — Clean Claim → Payor Process — Clean Claim → Payor Process — Clean Claim → Payment Posting — Clean Claim → Bank Reconciliation — Financial Reporting

AR Financials

Problem Order / Corrected Claim — Problem Claim / Corrected Claim — Problem Claim / Resubmit Claim — Front-end Denials — Back-end Denials

Pricing Discrepancies

Patient & Provider Portals **1** **2** | **3** RCM Engines **4** **5**

New Requirements, Rules, & Functionality

Update System

Inject AI Here: Exception Processing Prioritization

- Edits, Configurable Rules, and AI determine if a claim is likely to be rejected because of incorrect or incomplete payor information or patient ineligibility and use automation to resolve many issues.
- Rich and highly configurable AI can then quickly determine the probability of reimbursement to help prioritize the claims that still require intervention and then redirect those needing human attention to the best available team member.

Appeals

Write-offs

Collections

4

Simplifying Interactions with Payors and Translating Responses into Actionable Next Steps

Unstructured payor responses are RIPE for AI-driven automation

- Front-end payor acknowledgments are often returned with a generic status code **(A3:21)** and details are added in the **STC-12** field (or elsewhere) with unstructured text.

- Depending on the size and volume of healthcare providers, these number in the tens of thousands of varied text responses.

- Complicating the matter further are the multiple text explanations for one status code.

- Many RCM teams have these set to "**manual hold**" in their process and require human intervention, translation, and action.

In this example, the multiple unstructured notes indicate that there are diagnosis codes that shouldn't be reported together, among other issues.
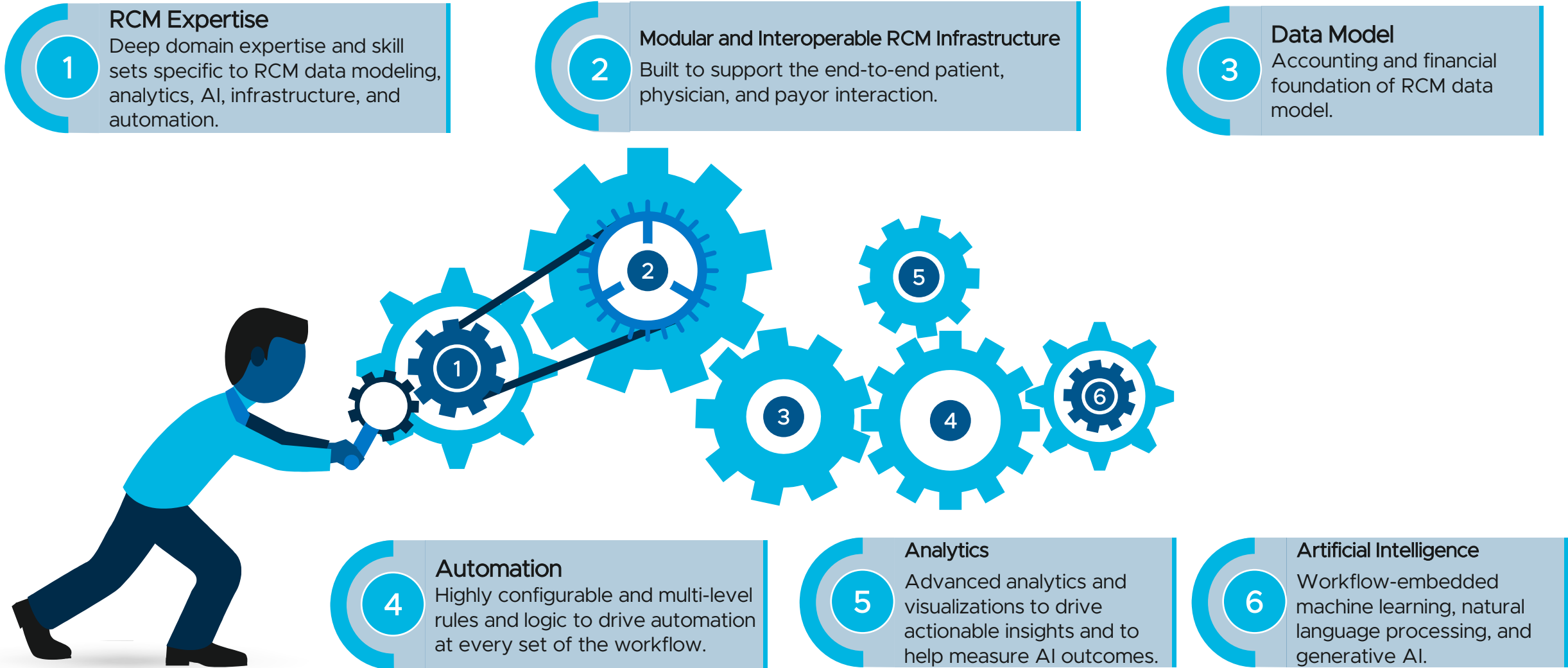
consumes unstructured text to drive next actions within RCM workflow

AI-Driven Workflow:
Assigning Exceptions to be Worked by Billing Team members
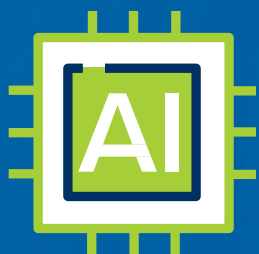
- **Exceptions Prioritized by Payment Risk**

- **Exceptions Routed to the Best Billing Team Member to Correct**

- **Exception-Processing Assignment**

- **Prioritized Exception-Processing List for each Billing Team Member**

Future-Ready Infrastructure and Expertise

RCM Expertise
1 Deep domain expertise and skill sets specific to RCM data modeling, analytics, AI, infrastructure, and automation.

Modular and Interoperable RCM Infrastructure
2 Built to support the end-to-end patient, physician, and payor interaction.

Data Model
3 Accounting and financial foundation of RCM data model.

Automation
4 Highly configurable and multi-level rules and logic to drive automation at every set of the workflow.

Analytics
5 Advanced analytics and visualizations to drive actionable insights and to help measure AI outcomes.

Artificial Intelligence
6 Workflow-embedded machine learning, natural language processing, and generative AI.

AI Program Transparency

🛡	Data Privacy and Security	📋	Regulatory and Payor Compliance
🧠	Algorithm Transparency	📦	Interoperability and Integration
⚖	Bias Mitigation	👤	Patient-Centric Approach
✔	Accuracy and Reliability	🤚	Ethical Considerations
🔍	Human Oversight and Intervention	⚙	Continuous Learning and Improvement

RCM-Focused AI Skills Set or Partnership Considerations

Validate Internal Skills Sets or Seek Out Expertise Via Partners Who:

Understand healthcare data models and metrics specific to financials and operational workflow.

Can advise about which AI approaches (Statistical, Machine Learning and/or Natural Language Processing, Generative AI) are best by purpose.

Can scope and deliver business-critical metrics and indicators.

Able to identify the most appropriate/useful analytics to achieve a particular goal or address a particular challenge.

Develop customized and reusable data/AI models and can integrate additional data from multiple sources and across the RCM process.

Flexible model related to the roster of expertise and skill set (in-house, outsourced, ongoing RCM partner, point-solution partnership).

Have track record of working with combined clinical/financial analytics.

RCM partner supplementation of existing analytics/AI resources on a short-term basis or longer-term engagement.

QUESTIONS?

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