

FIVE PRACTICAL WAYS EMBEDDED AI IS RESHAPING REVENUE CYCLE MANAGEMENT

From Reducing Friction to Accelerating
Reimbursement



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.

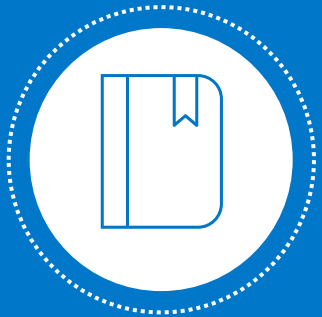
Before joining XiFin, Jeff led worldwide software development for the network and security division of LSI Corp. He has held senior-level leadership positions at several successful startups and divisional leadership positions at Intel.



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?

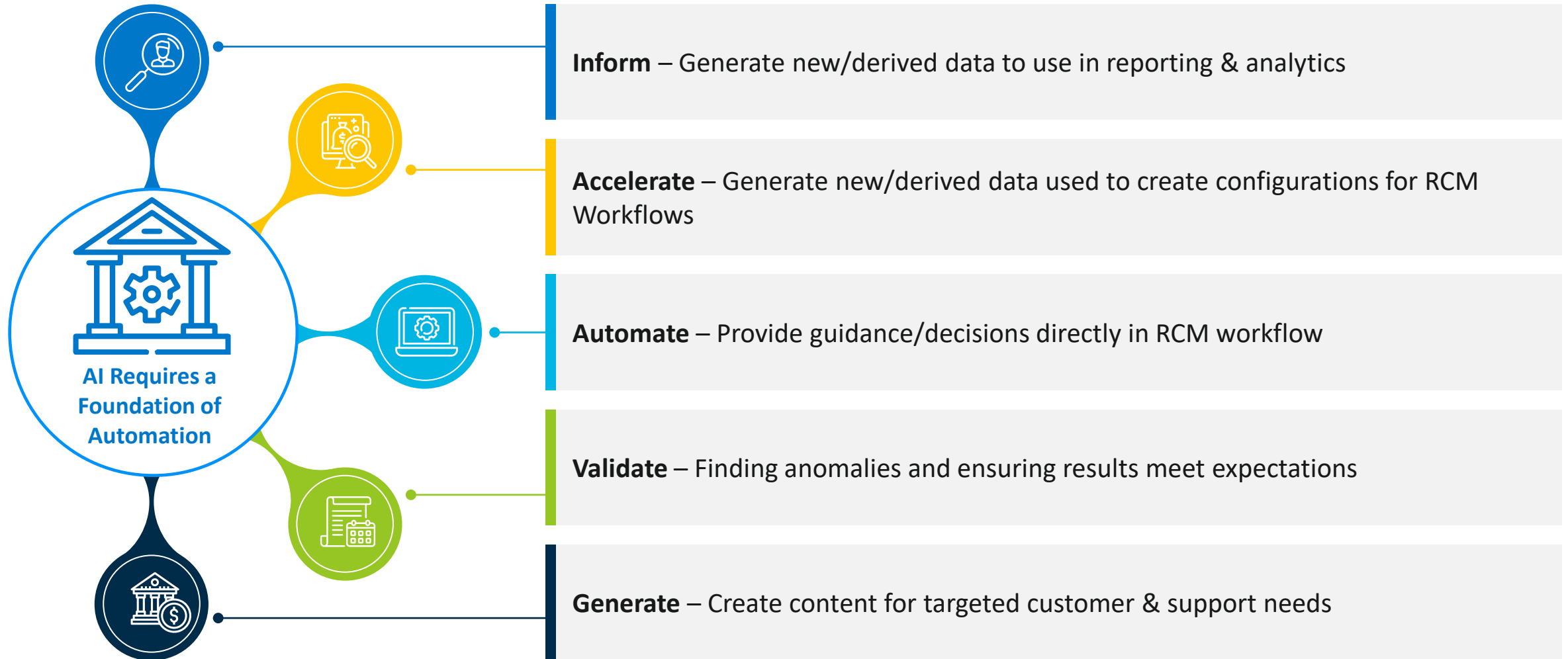
Five Ways AI is Reshaping RCM

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.

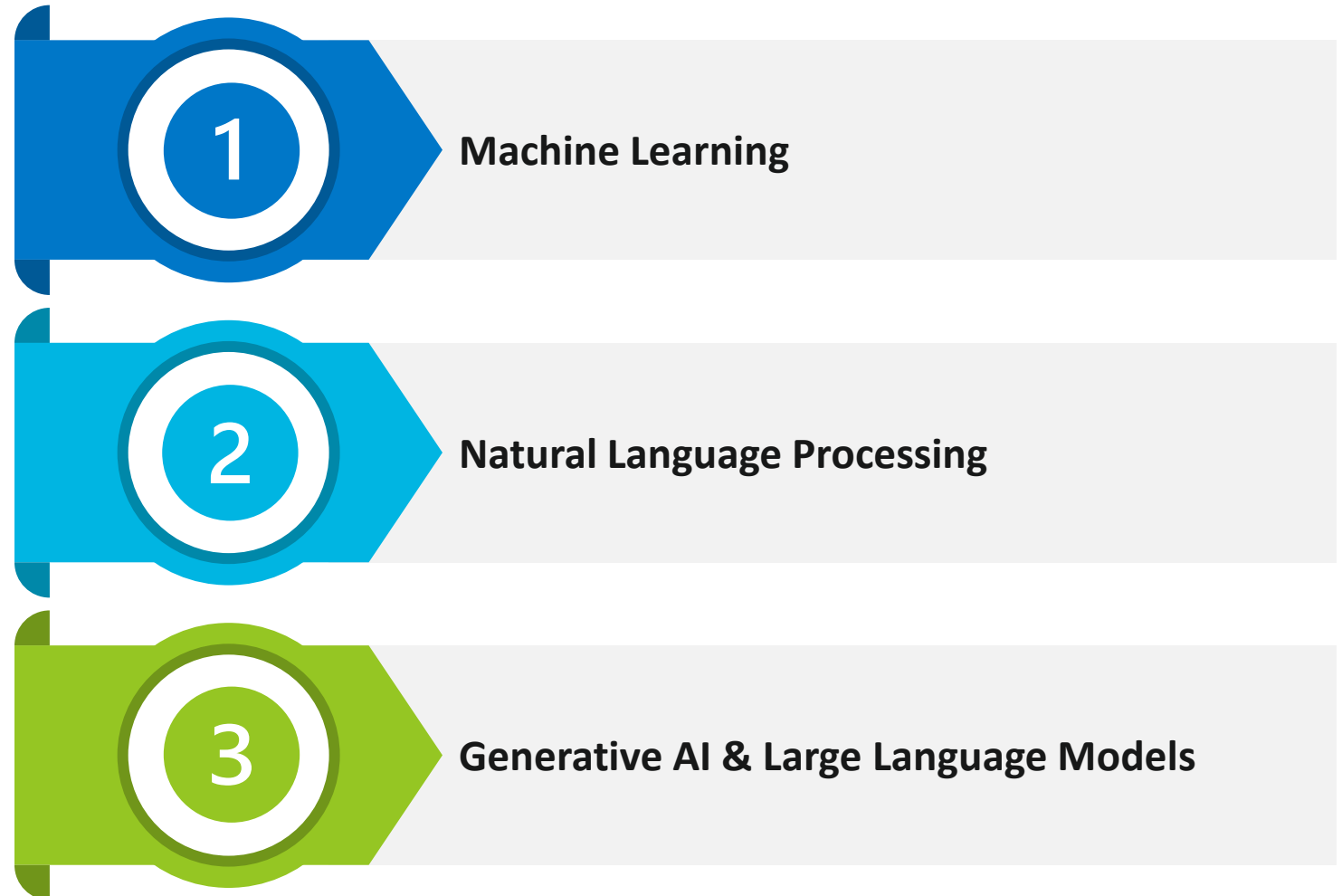


Robotic Process Automation vs. AI

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)



LLM

LARGE
LANGUAGE
MODEL

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

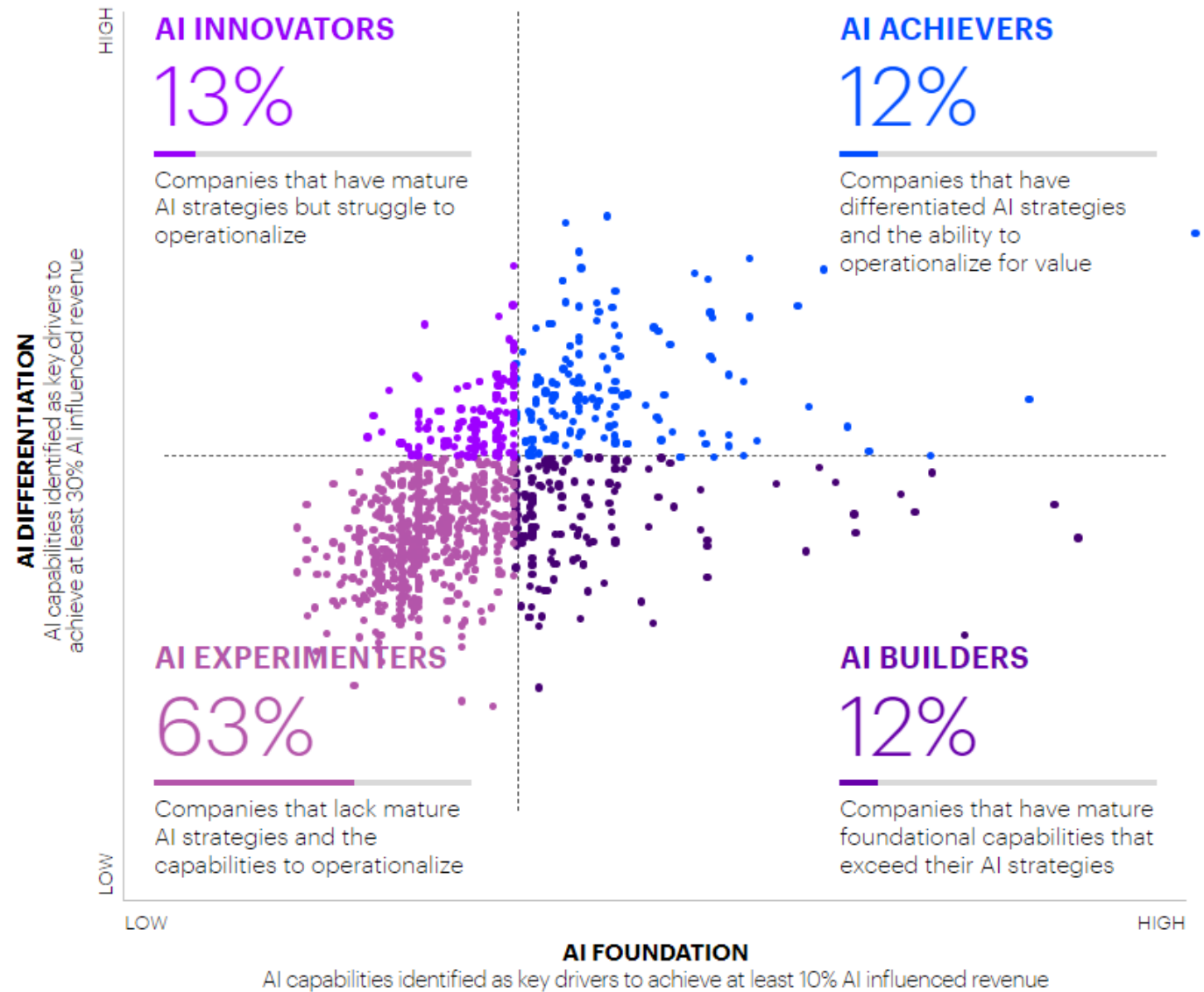
Answer Options	75 Responses via Dark Webinar
We are not contemplating using AI for RCM	15.1%
We are planning to use AI for RCM	17.7%
We use Robotic Process Automation	10.7%
We use Machine Learning or Natural Language Processing	3.7%
We use Generative AI – Large Language Models	1.8%

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

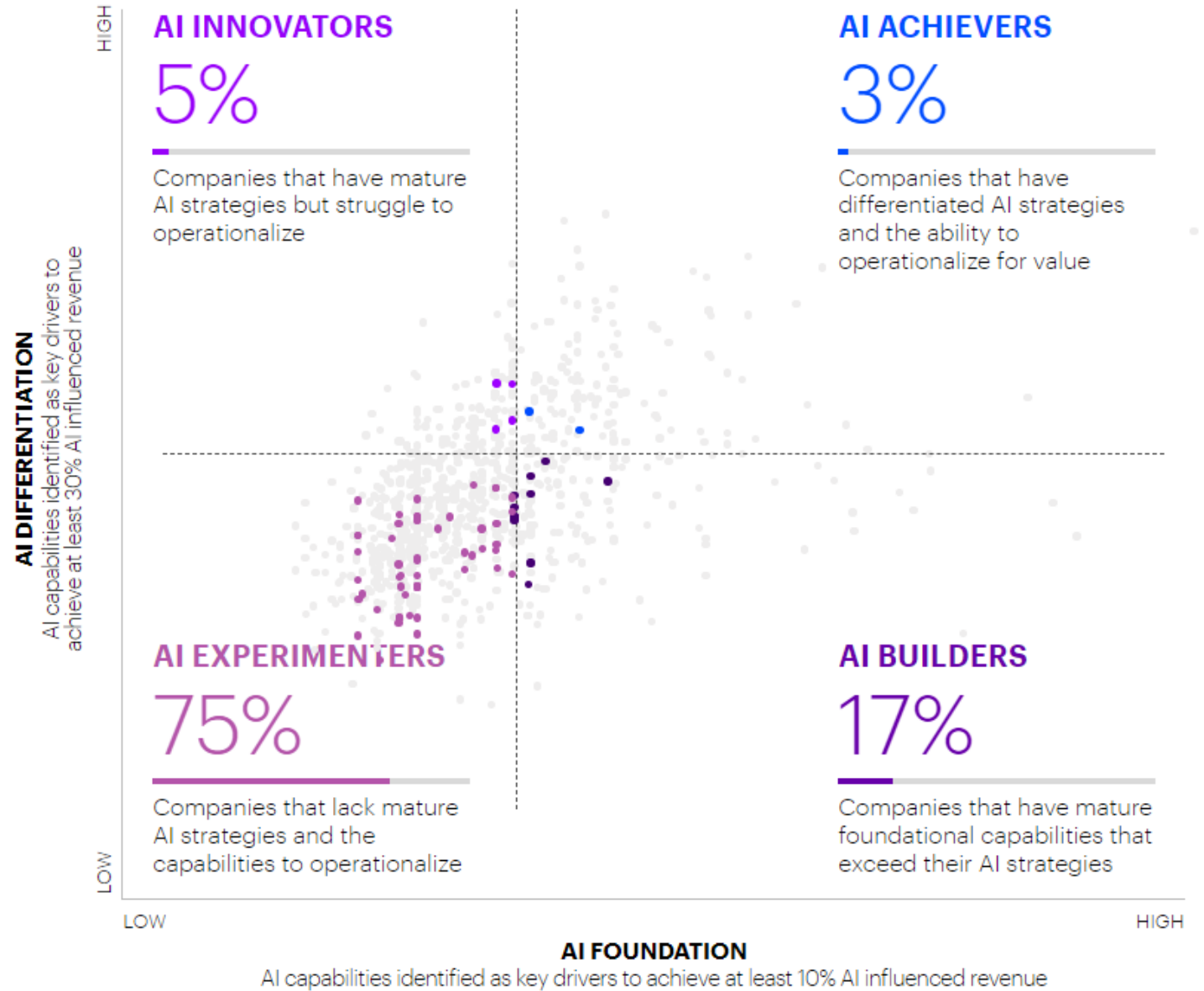


Source: https://www.accenture.com/_acnmedia/pdf-83/accenture-becoming-data-driven-enterprise-data-industrialization.pdf

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

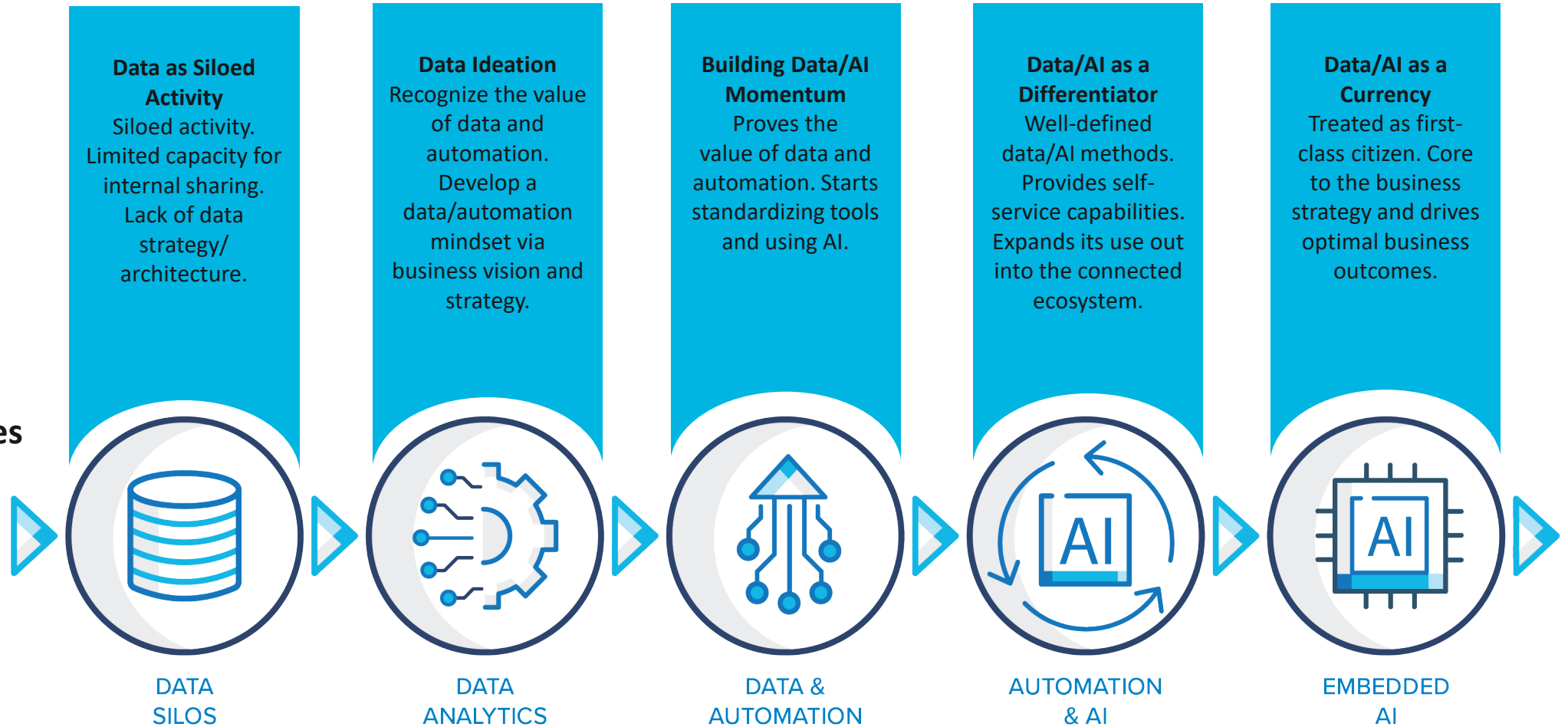


Source: https://www.accenture.com/_acnmedia/pdf-83/accenture-becoming-data-driven-enterprise-data-industrialization.pdf

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**.



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

Those little icons on your insurance card

South Carolina

Member Name
SUBSCRIBER NAME

Member ID
ZCT012345678901

RxBIN	004336	PLAN	PPO
RxGRP	RX4236		
RxPCN	MEDDADV		
Issuer	80340		
Part D/Plan Benefit	CMS-H4209-XXX		

MA PPO
MEDICARE ADVANTAGE

BlueCross BlueShield

Member Name	Dependents
Member Name	Dependent One
Member ID	Dependent Two
XYZ123456789	Dependent Three

Group No.	023457	Plan	PPO
BIN	987654	Office Visit	\$15
Benefit Plan	HIOPT	Specialist Copay	\$15
Effective Date	00/00/00	Emergency	\$75
	TDI	Deductible	\$50

blue california **trio HMO**

A Subscriber	C ID# XEA000000000	MEDICAL GROUP NAME, INC PHYSICIAN NAME
FRST M LAST		(XXX) XXX-XXXX
B Member		G Coverage
FRST M LAST		FAMILY
E Group #	W0000000	K Language
F Effective	04/01/2021	H Plan
D Copayment		I RxBIN
Primary Care \$xx	Specialist \$xx	J RxPCN
Urgent Care Center \$xx	Teladoc \$x	
Emergency Room \$xx		

07/01/21

Tagalog

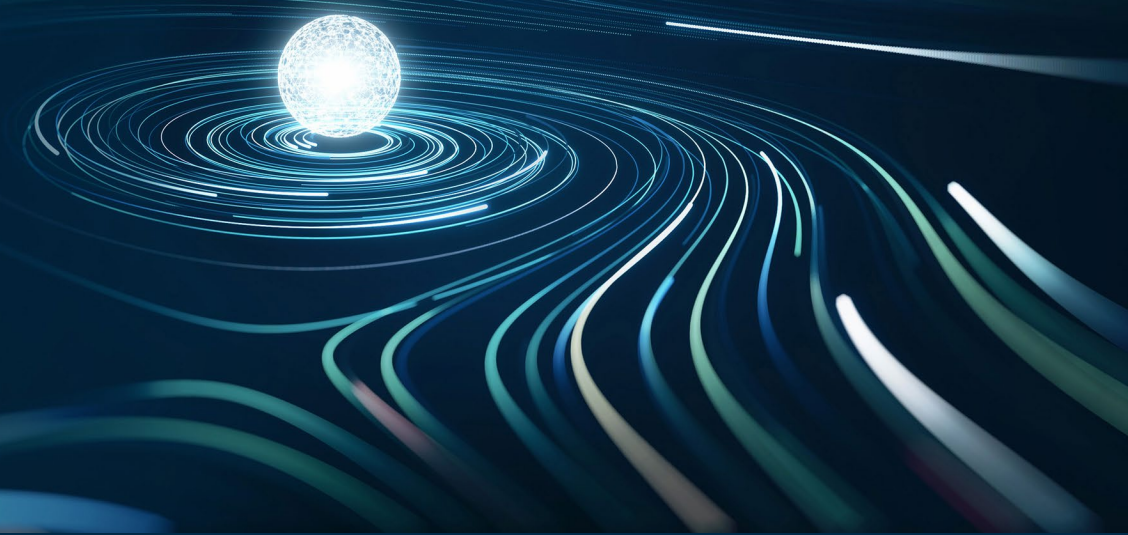
HMO

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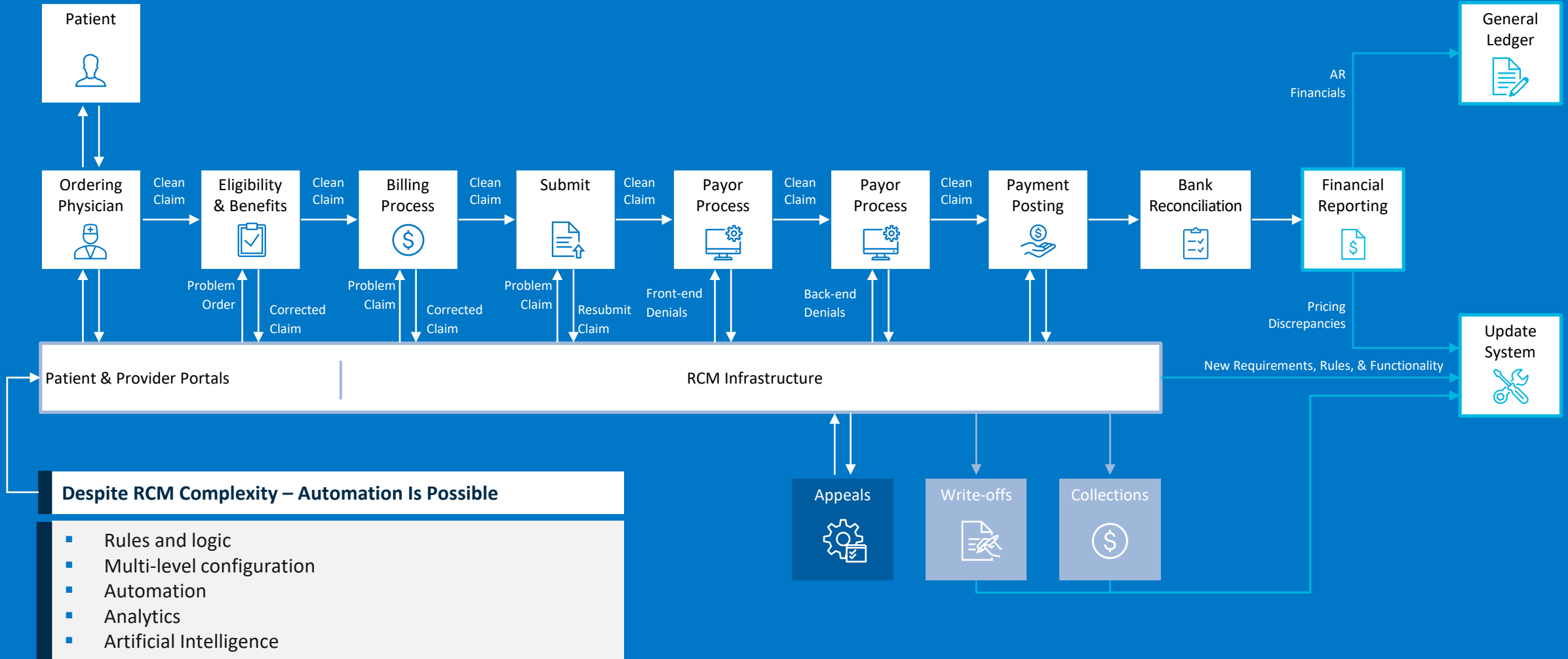
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- ❖ RCM Data is complicated.
- ❖ Dirty or unstructured data leads to unintelligent AI.
- ❖ Applying analytics to RCM derives actionable and understanding insights.
- ❖ It identifies problematic data models and forces optimal data structures.
- ❖ AI success depends on data quality and training models and approaches.



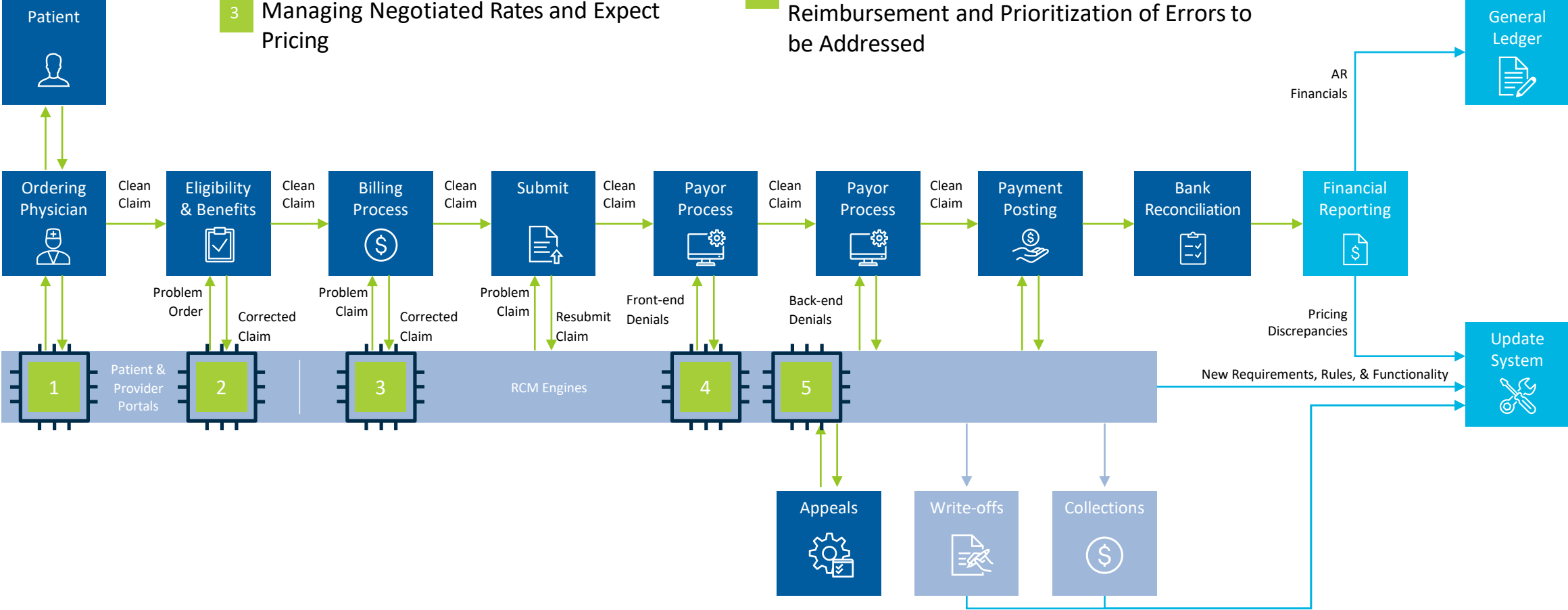
Step-by-Step View of the Lifecycle of a Claim

Automation Demands Purpose-built Data Modeling, Logic, and Interoperability



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



1

Patient



Insurance Information Required from Patients is Extensive

Reading the insurance card and hunting for the information being requested



Insurance Information

1.BCBSNJ

Payor Information			
Payor Priority*	1	Effective Date	08/01/2019
Insurance Name*	BCBS NJ	Subscriber ID*	XZ258369951
Group ID	NYANKS	Group Name	
Plan ID		Case ID	

Insured Information			
Relationship*	self	Last Name*	COSTANZA
First Name*	GEORGE	Gender*	Male
Date Of Birth*	01/09/1969	City	FLUSHING
Address 1*	1344 QUEENS BLVD	State	New York
Postal Code	11351		
Country	USA		

Employer Information			
Employer Name		Employment Status	
Address 1		Address 2	
City		Postal Code	e.g. 92130
State		Country	USA
Work Phone		Fax	

[Back](#) [Submit](#)

This site uses SSL for a secure transaction

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



Member Name
SUBSCRIBER NAME

Member ID
ZCT012345678901

RxBIN	004336	PLAN	PPO
RxGRP	RX4236		
RxPCN	MEDDADV		
Issuer	80340		
Part D/Plan Benefit	CMS-H4209-XXX		



Member Name Member Name Member ID XYZ123456789	Dependents Dependent One Dependent Two Dependent Three
Group No. 023457 BIN 987654 Benefit Plan HIOPT Effective Date 00/00/00 TDI	Plan PPO Office Visit \$15 Specialist Copay \$15 Emergency \$75 Deductible \$50

A Subscriber FIRST M LAST	C ID# XEA000000000	MEDICAL GROUP NAME, INC PHYSICIAN NAME (XXX) XXX-XXXX 07/01/21
B Member FIRST M LAST		G Coverage FAMILY
E Group # W0000000		K Language Tagalog
F Effective 04/01/2021		H Plan HMO
D Copayment Primary Care \$xx Urgent Care Center \$xx Emergency Room \$xx	Specialist \$xx Teladoc \$x	I RxBIN 000000 J RxPCN 00000000

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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

A screenshot of a patient portal interface. The background shows a form with fields for 'Payor Priority*', 'Insurance Name*', 'Group ID', and 'Plan ID'. Below this are sections for 'Insured Information' (Relationship*, First Name*, Date Of Birth*, Address 1*, Postal Code, Country) and 'Employer Information' (Employer Name, Address 1, City, State, Work Phone, Country, Fax). A modal window titled 'Change Insurance' is open in the foreground. It has a close button (X) in the top right. The modal contains a 'List Of Insurance Payor Groups' section with a list of insurance providers: Aetna, Anthem, Blue Cross & Blue Shield, Centene, Cigna, Humana, Medicaid, Medicare, Other Commercial, Tricare, and United Healthcare. There is also a 'Search By Insurance Name' section with a search box containing 'ALOHACARE' and a dropdown menu.

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.

Address 2



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

2

Patient



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.

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](#)

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 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

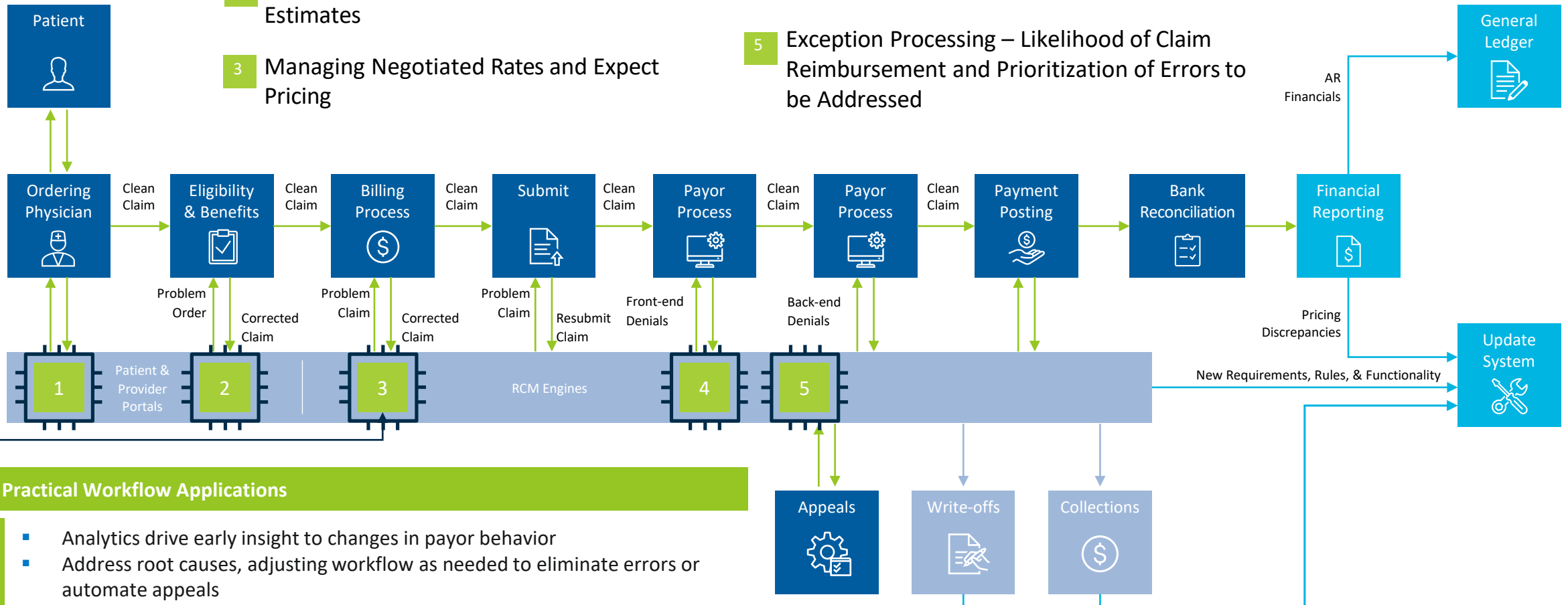
Rules are complex, differ from payor to payor, and don't always get to a unique result that will match adjudication.

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

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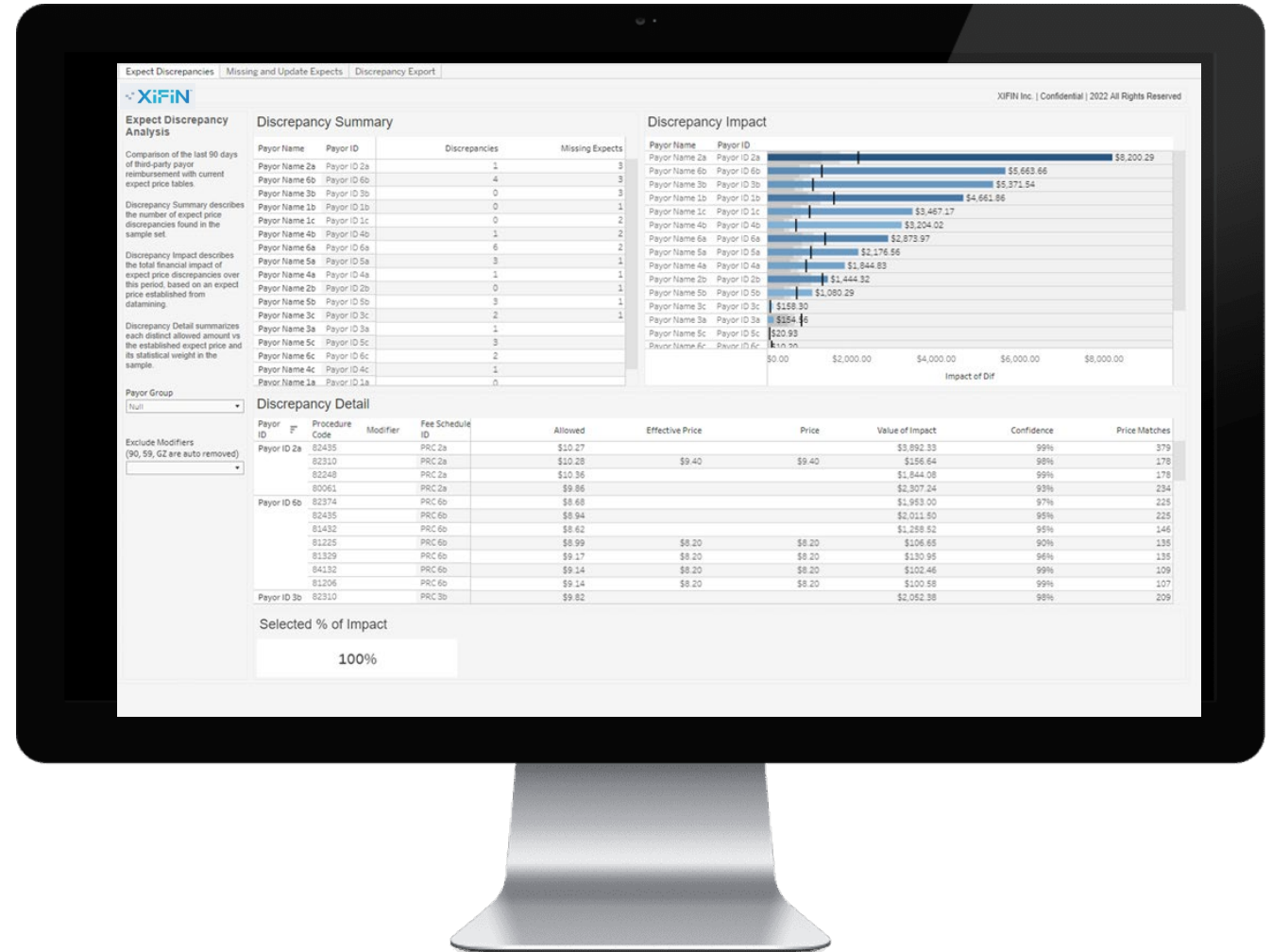
Practical Workflow Applications

- 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



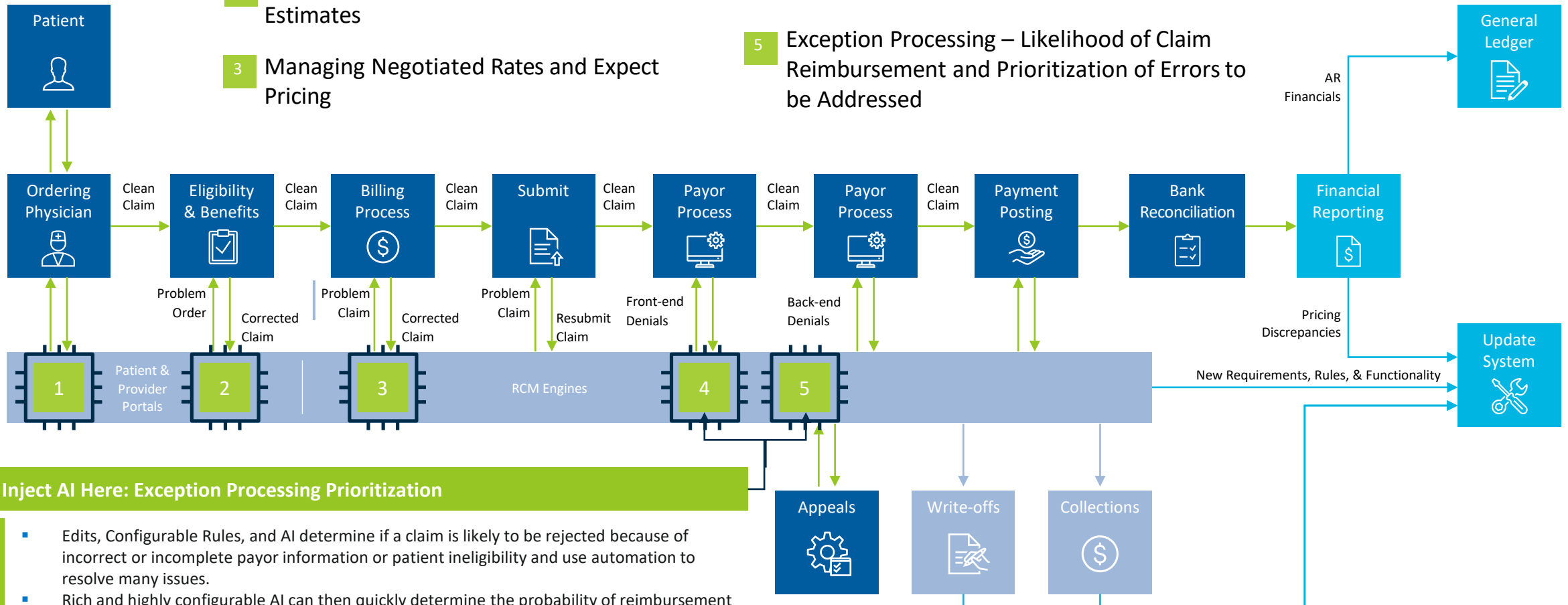
Negotiated Rates and Expect Pricing

- 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.



Embedded AI: Applications Throughout the Billing Process

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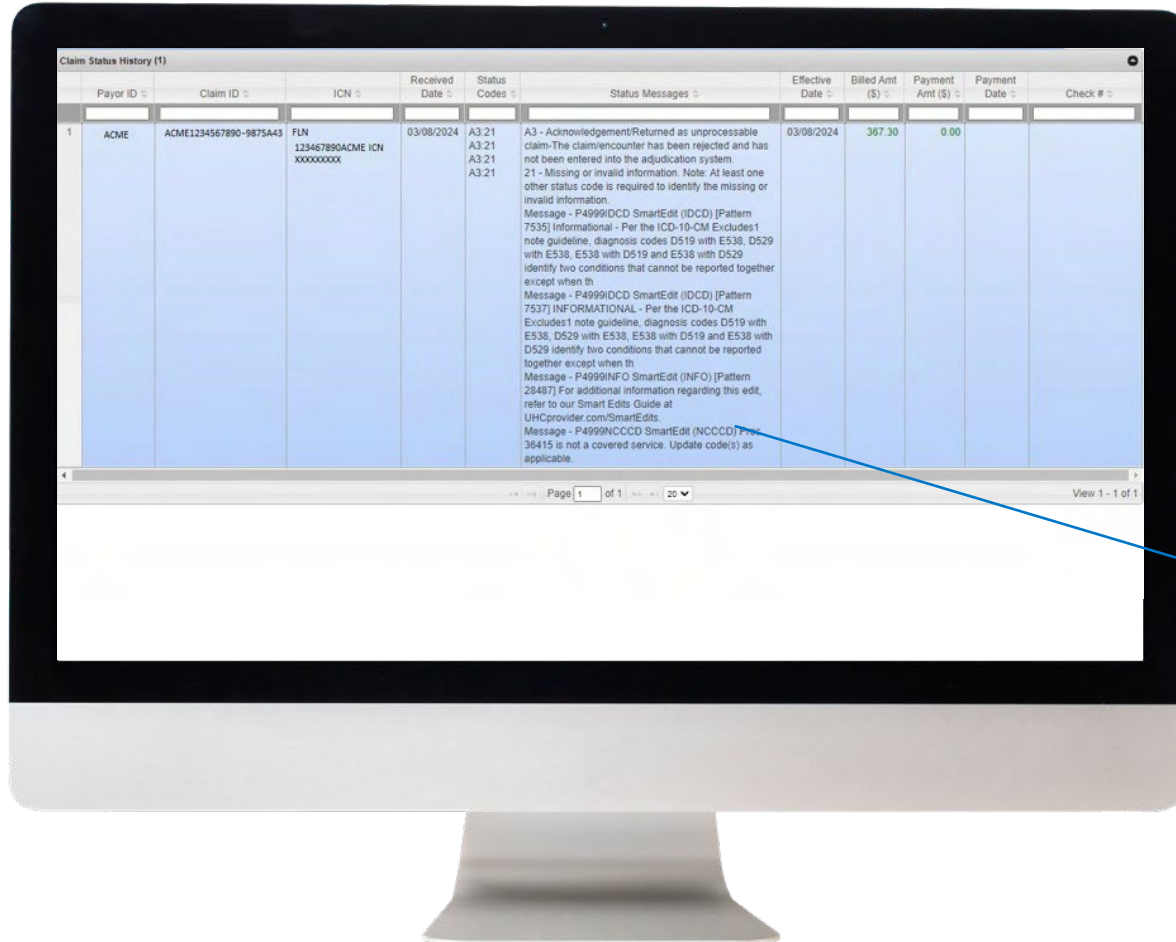
Inject AI Here: Exception Processing Prioritization

- 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.

Simplifying Interactions with Payors and Translating Responses into Actionable Next Steps

Unstructured payor responses are RIFE 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.



Payor ID	Claim ID	ICN	Received Date	Status Codes	Status Messages	Effective Date	Billed Amt (\$)	Payment Amt (\$)	Payment Date	Check #
ACME	ACME1234567890-987543	FLN 123467890ACME ICN XXXXXXXXXX	03/08/2024	A3:21 A3:21 A3:21	A3 - Acknowledgment/Returned as unprocessable claim-The claim/encounter has been rejected and has not been entered into the adjudication system. 21 - Missing or invalid information. Note: At least one other status code is required to identify the missing or invalid information. Message - P4999ICCD SmartEdit (ICCD) [Pattern 7535] Informational - Per the ICD-10-CM Excludes1 note guideline, diagnosis codes D519 with E538, D529 with E538, E538 with D519 and E538 with D529 identify two conditions that cannot be reported together except when the Message - P4999ICCD SmartEdit (ICCD) [Pattern 7537] INFORMATIONAL - Per the ICD-10-CM Excludes1 note guideline, diagnosis codes D519 with E538, D529 with E538, E538 with D519 and E538 with D529 identify two conditions that cannot be reported together except when the Message - P4999INFO SmartEdit (INFO) [Pattern 29487] For additional information regarding this edit, refer to our Smart Edits Guide at UHCprovider.com/SmartEdits. Message - P4999NCCCD SmartEdit (NCCCD) [Pattern 36415] is not a covered service. Update code(s) as applicable.	03/08/2024	367.30	0.00		

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

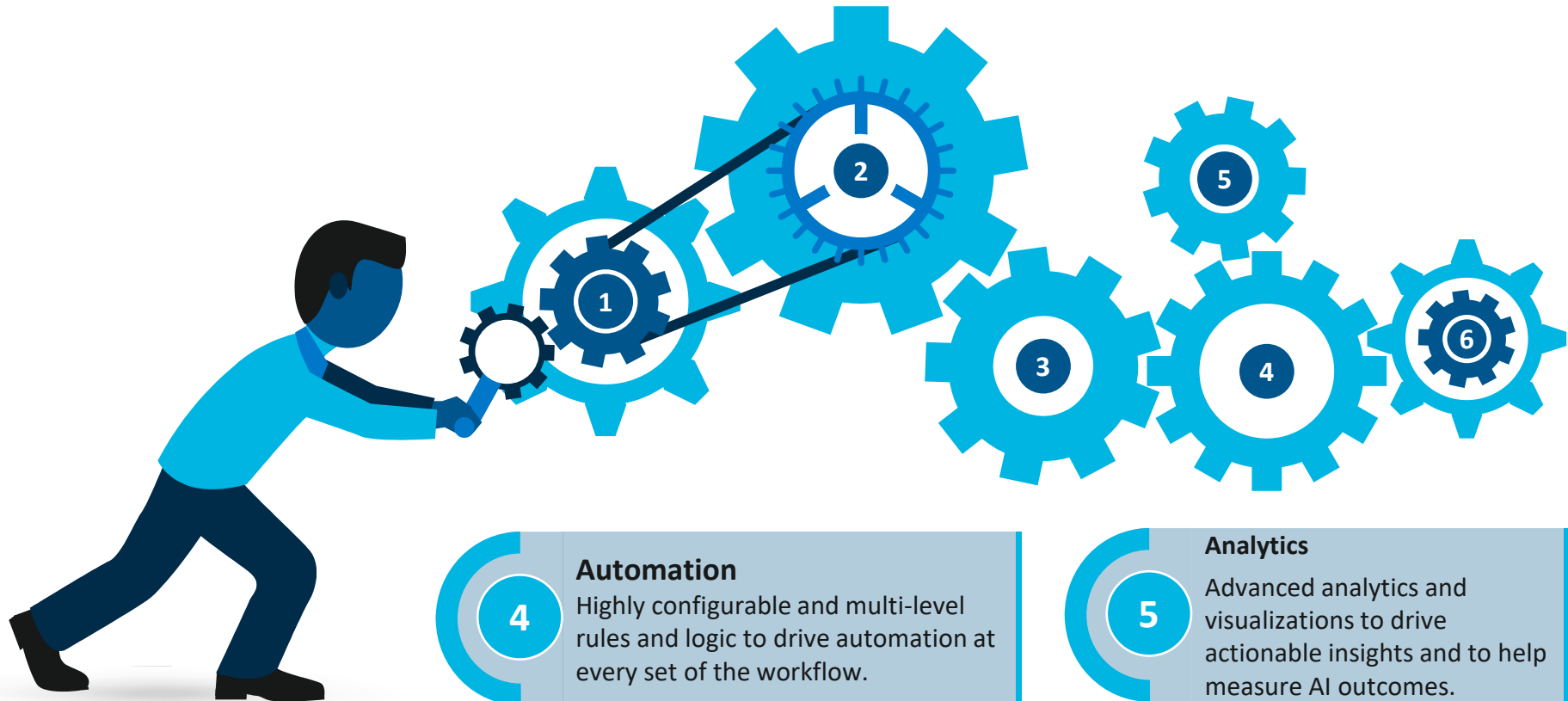
AI-Driven Workflow: Assigning Exceptions to be Worked by Billing Team members

- 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



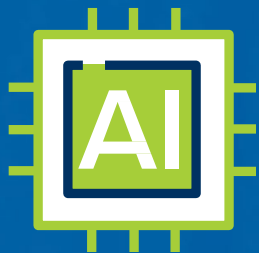
Future-Ready Infrastructure and Expertise

- 1 RCM Expertise**
Deep domain expertise and skill sets specific to RCM data modeling, analytics, AI, infrastructure, and automation.
- 2 Modular and Interoperable RCM Infrastructure**
Built to support the end-to-end patient, physician, and payor interaction.
- 3 Data Model**
Accounting and financial foundation of RCM data model.



- 4 Automation**
Highly configurable and multi-level rules and logic to drive automation at every set of the workflow.
- 5 Analytics**
Advanced analytics and visualizations to drive actionable insights and to help measure AI outcomes.
- 6 Artificial Intelligence**
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 scope and deliver business-critical metrics and indicators.



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



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



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



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



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



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



QUESTIONS?

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