

Revenue Cycle Management Technology Adoption Model

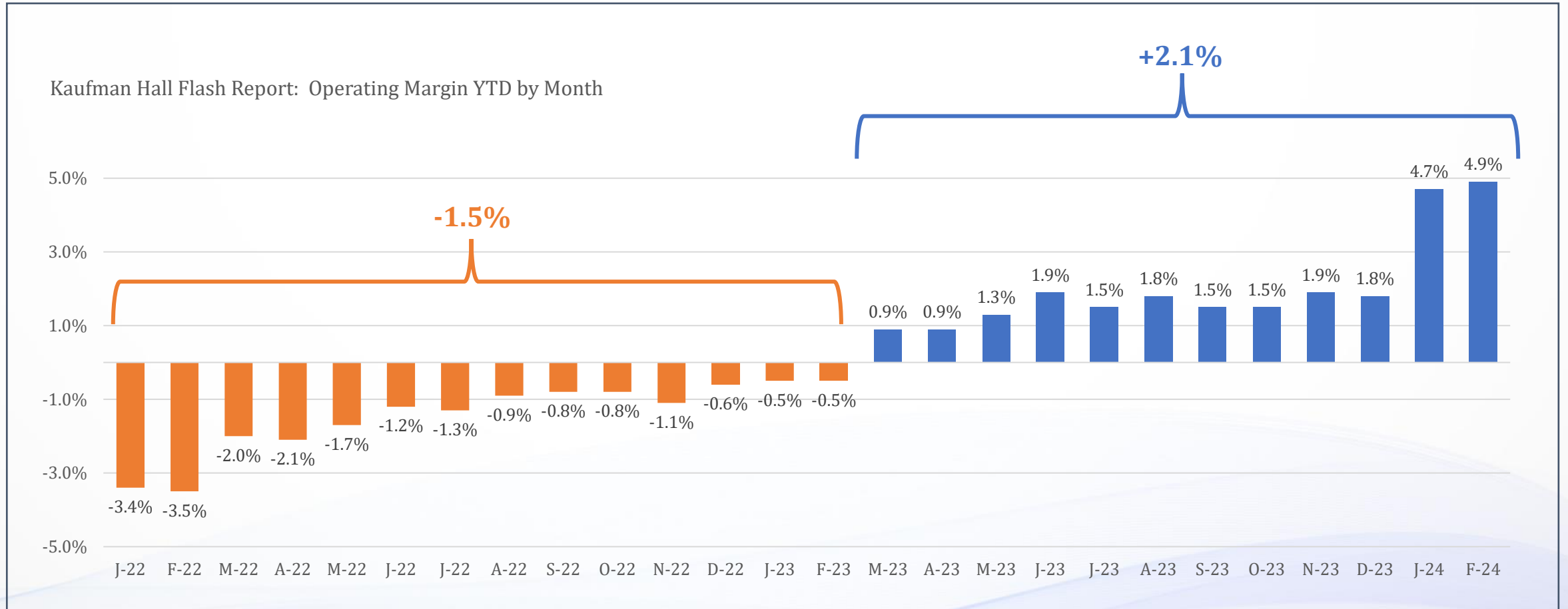
Learning Objectives

- Overview of healthcare market headwinds and profitability challenges
- Identify the correlation between RCM technology adoption patterns and resulting financial performance
- Adopt a company-agnostic revenue management technology model based on the experience of well over 100 health systems, where assessments of the critical revenue capture elements are weighted and identified
- Assess an organization's current adoption stage and establish technology adoption strategies to achieve improved KPI-based revenue management goals

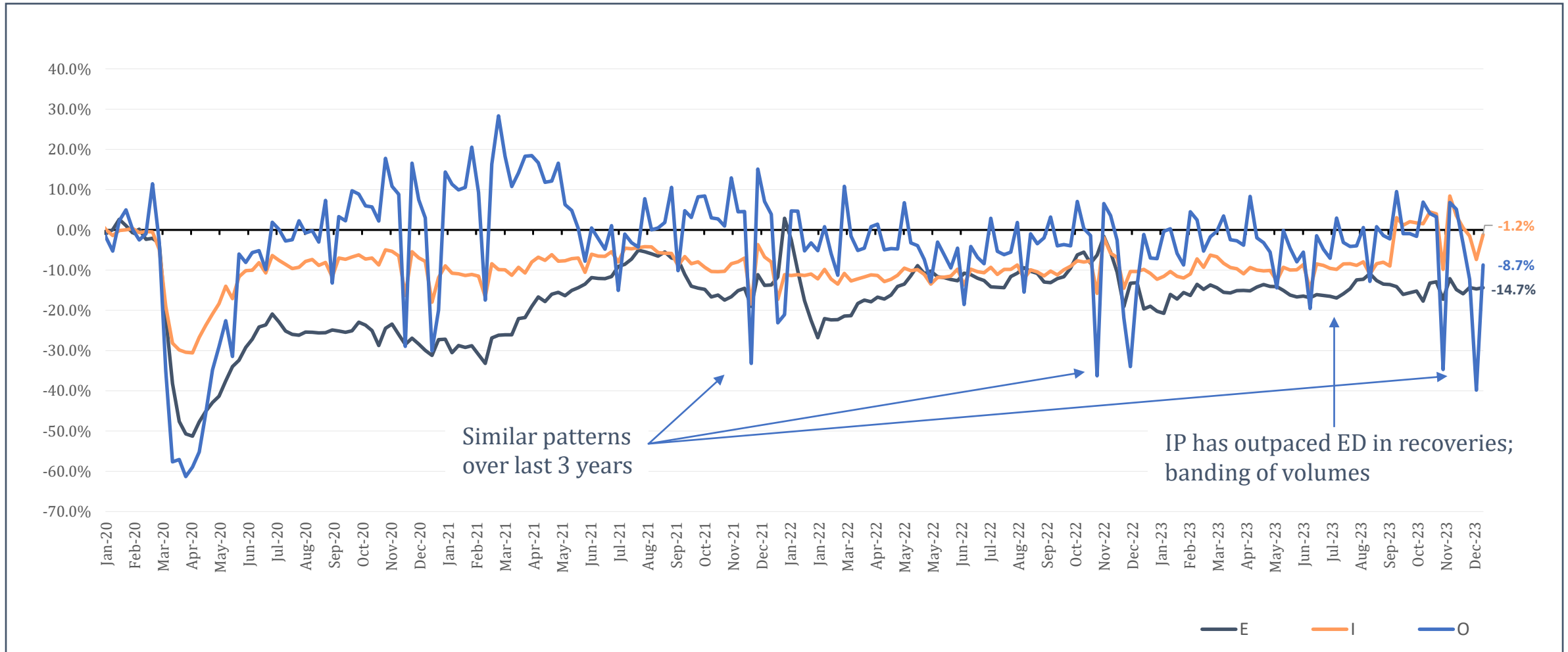
Recovery...



KH: Promising Margin Recoveries in '23 and Into '24



Weekly Visit Volumes - By Treatment Setting



US Healthcare Position Openings and Hirings

2018 - 2023 (000s) - BLS JOLTS Survey



AHA: Payers are Playing Hardball

“Commercial health insurer policies and administrative practices delay patient care, overburden clinicians and withhold critical payments from providers...”

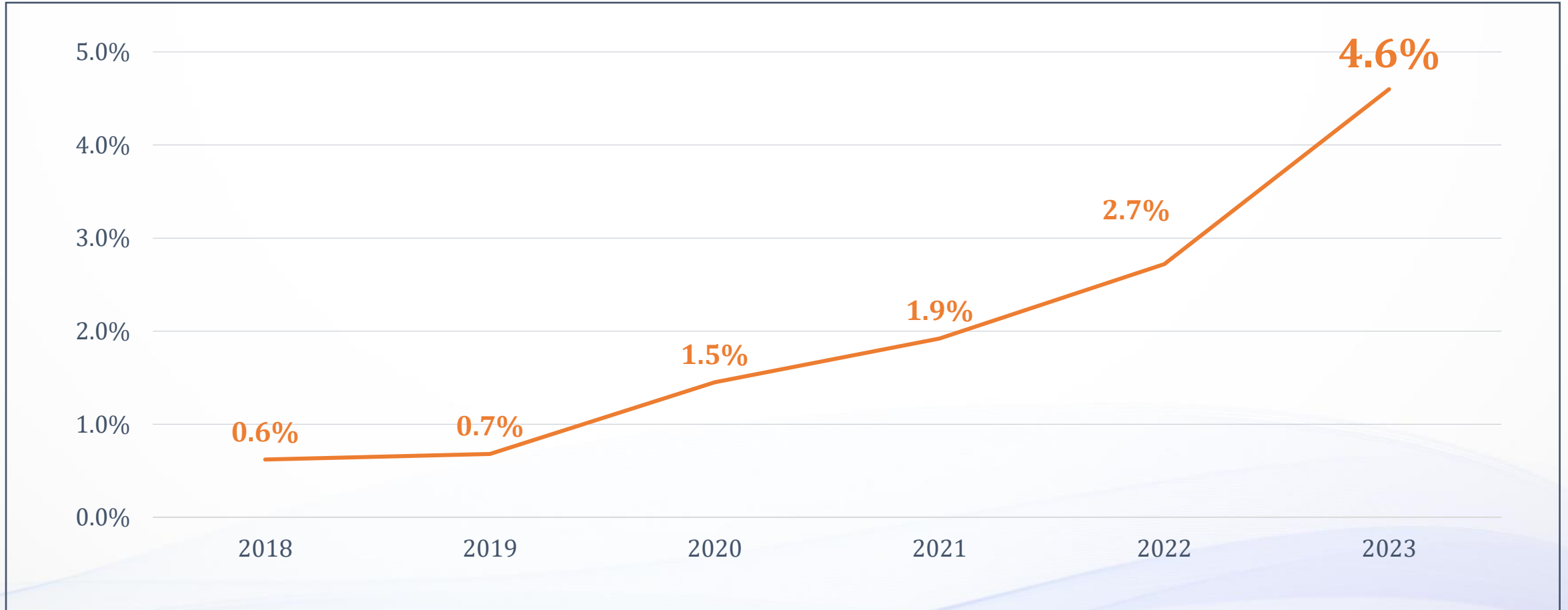
Contributing to workforce burden:

- 95% of hospitals and health systems report **increases in staff time** spent seeking prior authorization approval
- 84% report the **cost of complying with insurer policies** is increasing
- 62% of **prior authorization denials** and 50% of initial claims denials that are appealed are ultimately overturned

And it is only getting worse:

- 78% of hospitals and health systems report that their experience with commercial insurers is getting **worse**

Denials are Almost 4x What They Were in 2018



Revenue Cycle Management Market Approach

Health Systems Shifting From Revenue Recovery to Growth

Survey Methodology

- 92 unique organizations
- CRO/CFO, SVP or VP RCM, Director RCM
- All major EHRs
- NPR and Bed-Size
- 26,719 unique data points



Financial leaders are looking for strategic partners to chart a course forward.

Most health systems have contracted with **upwards of 40 vendors** to support their revenue cycle management teams.

Front-End				Mid-Cycle		Back-End			
Patient Engagement	Pre-Service Clearance	Authorization	Patient Financial Engagement	Clinical Doc.	Encounter Coding & Charge Capture	Claims Processing & Payment	Insurance Collections	Patient Payment & Billing	Revenue Recovery / Protection
CRM & Referral Management	Eligibility & Benefits Verification	Prior Authorization / Certification	Patient Out-of-Pocket (OOP) Estimation	Transcription	Coding	Claims Edits	AR Management	Inbound / Outbound Patient Calls / IVR	Insurance Discovery
Patient Scheduling	Patient Registration / Pre-registration	Medical Necessity / ABN	Propensity-to-Pay / SDOH Risk Analytics	Clinical Doc. Improvement	Charge Capture	Claims Status	Contract Management	Paper Patient Statements	Bad Debt Collection
Patient Portal / Mobile App	Registration Quality Management	Notification of Admission	Charity Care Evaluation	Provider Query Management	CDM Automation	Claims Clearinghouse	Contract Modeling	Consolidated Patient Amount / E-statement	AR Recovery
Pricing Transparency	Patient Financial Clearance		Patient POS Payment and Plans & Financing		Recovery Audits	Remittance Matching	Reserves Management	Mobile Payments / Text-to-Pay	Government Complex Reimbursement
Virtual Front Desk	Patient Identity Verification				Encounter Clearinghouse	Third Party Liability	Online Payments		
Patient Reminders	Insurance Discovery				Complex Claims	Early-out Collections	Patient Payment Plans & Financing		
Foundation									
Analytics		AI/ML/NLP		RPA		Billing and Coding Reference Tools		RCM Workforce Education Content	

Common Concerns from RCM Leadership

- What is outside my core EHR and why?
- What RCM technology is in place today?
- What is my total cost of ownership?
- Has the yield from the solutions improved?
- What are the IT and data connections?
- What is my strategic path to RCM excellence?
- Where can I automate or leverage predictive analytics?
- How many vendors do I need?

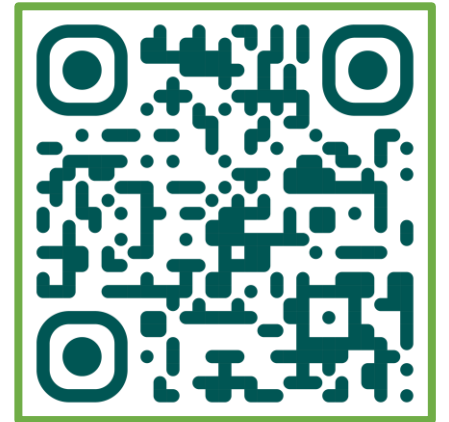


RCM vendor performance has been **difficult** to measure, **expensive** to maintain and **duplicative** in offerings

Hospitals are closely evaluating third party relationships – looking to **consolidate** or **eliminate**



Revenue Cycle Management Technology Adoption Model (RCMTAM)



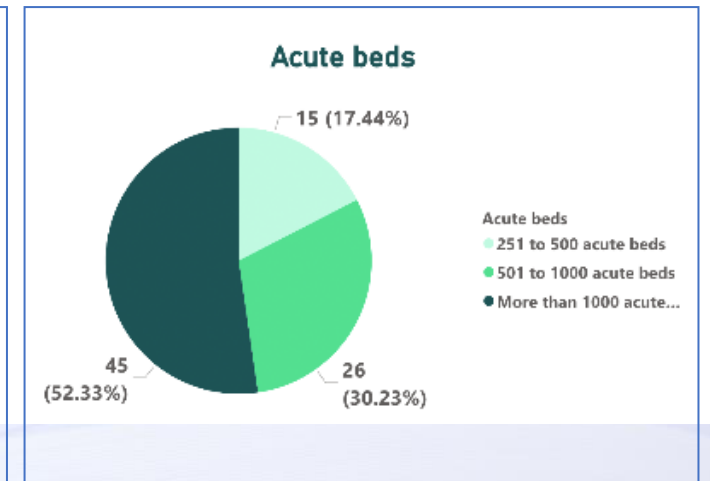
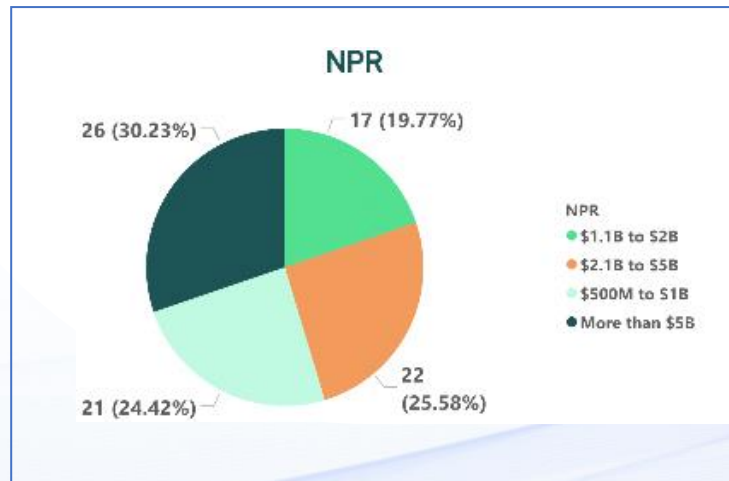
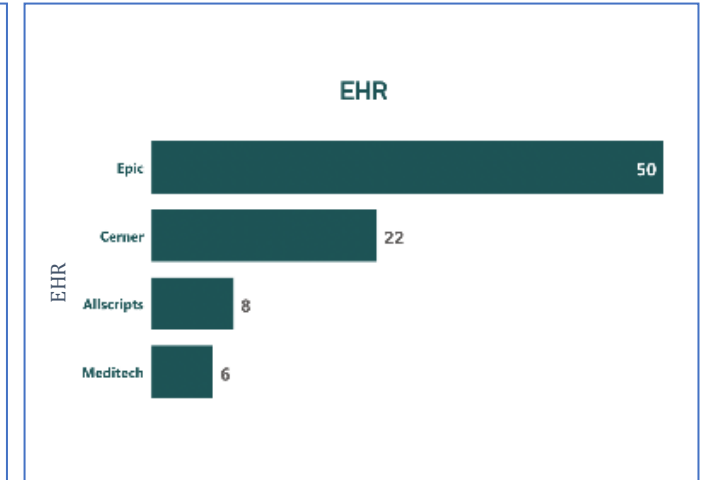
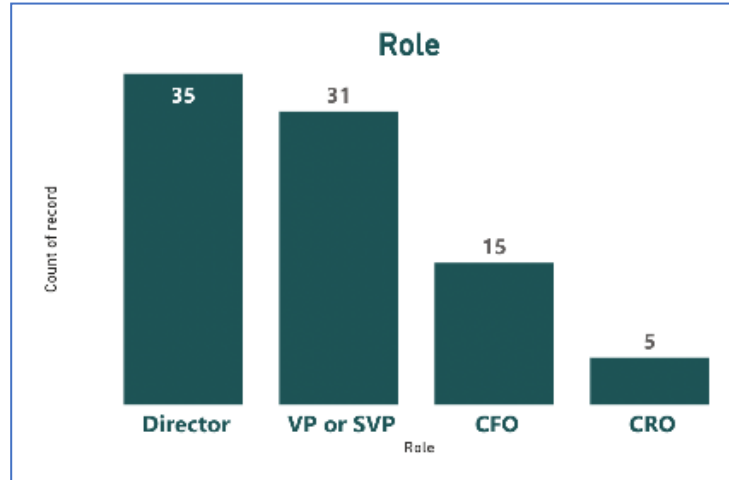
An Evidence-Based Approach to RCM Digital Transformation

Research Hypothesis

The industry lacks an RCM-focused technology adoption model to support digital transformation efforts.

Methodology

- 100 unique organizations (now at 120+)
 - + 15 Safety Net Organizations
- All major EHRs
- NPR and Bed-Size
- 31,145 unique data points



Analysis and Findings

Analysis

1

Focus adoption model on high impact technologies.

We asked survey respondents to categorize each technology into “Mission Critical”, “High Value”, “Moderate Value”, “Minimal Value”, and “No Value / Not RCM.”

2

Align the RCM Technology Adoption Model stages with average industry adoption.

We segmented the remaining technologies into 4 technology adoption maturity stages based on the percent of respondents that listed a technology as being adopted within their organization

- Greater than 80% adoption of technology
- Between 70%-80% adoption of technology
- Between 60%-70% adoption of technology
- Below 60% adoption of technology

Results

1

All technologies included in initial study rated as “Moderate Value”, “Low Value”, or “No Value” were removed from model.

Technologies perceived as having limited value were identified and removed from the adoption model analysis across all areas: Patient Access, Mid-Cycle, Back Office, and Analytics.

Only “Mission Critical” and “High Value” technologies were included in the resulting RCM Technology Adoption Model.

2

Technologies have been grouped into stages based on average adoption by industry.

The RCM Technology Adoption Model highlights Mission Critical and High Value technologies spanning all stages, even low adoption stages, suggesting the model is effectively identifying high impact established and emerging technologies.

The RCM Technology Adoption Model

Mission Critical or High Value Technology in use by **more than 80%** of respondents

Broad Industry Adoption

Eligibility & benefits verification	Patient Access
Patient registration / pre-registration	
Medical necessity/ ABN	
Charge capture	Mid-Cycle
Chargemaster technology	
Discharge planning	
Claims manager	Back Office
• Claims edits	
• Claims clearinghouse	
• Claims status	
Paper patient statements	
Collections management	
Bad debt collections	Analytics
A/R analytics	
Claims analytics	
Collections analytics	
Coding analytics	
Patient volume analytics	

Mission Critical or High Value Technology in use by **70% to 80%** of respondents

High Adoption

Referral management	Patient Access
Patient portal / mobile app	
Patient identify and address verification	
Pricing transparency (shoppable services + MRFs)	
Patient OOP payment estimation	
Patient financial clearance	
POS payment capture	Mid-Cycle
Charity care evaluation	
Clinical documentation integrity (CDI)	
Clinical documentation - transcription/NLP	Back Office
Utilization Review	
Denials management	
Underpayment recovery	
Consolidated patient statements	
Remittance management	
Complex claims	Analytics
Encounters clearinghouse	
Contract management	
Third-party liability	
Medicare bad debt	
Call center automation/IVR	
Contract analytics	
Denials analytics	
Patient access analytics	

Mission Critical or High Value Technology in use by **60% to 70%** of respondents

Moderate Adoption

Patient self-scheduling	Patient Access
Prior authorization/certification	
Patient appointment reminders	
Pre-visit Propensity to pay	
Pre-visit payment plan enrollment	
Self-service patient payments (pre-visit)	
Registration quality management	Mid-Cycle
Physician CDI/Coder querying technology	
Predictive CDI Worklist prioritization	
Post-visit insurance discovery	Back Office
Disproportionate share reporting	
Transfer DRG	
Post-visit payment plan enrollment	
Self-service patient payment (post-visit)	
Automated remittance matching	
Data extraction capabilities	Analytics
Drill-down to transaction level capabilities	
Contract modelling	
Physician practice operations analytics	
Uncompensated care analytics	

Mission Critical or High Value Technology in use by **less than 60%** of respondents

Emerging Adoption

Pre-visit insurance discovery	Patient Access
Prior authorization automation	
• Automated determination	
• Automated data extraction and submission	
• Prior authorization status monitoring	Mid-Cycle
Virtual front desk	
Self-triage / care navigation	
Clinical documentation - ambient clinical intelligence (ACI)	
Computer assisted physician documentation (CAPD)	Back Office
Computer assisted coding	
• ML-based ICD & CPT coding	
• ML-based DRG assignment	
Case management	
• SDOH risk analytics	
• SDOH referral management	Analytics
Predictive denials warnings	
Automated appeals workflows	
End-to-End RCM analytics	Analytics
Real-time, near real-time refresh capabilities	
Patient matching / deduplication capabilities	
Intelligent denials and underpayment root cause analysis	

Key: Mission Critical High Value

Analysis and Findings

Analysis

Segment individual respondents into an RCM Technology Adoption Model Stage.

Respondents were assigned their maturity stage if they reported adoption of:

- Adoption of 90% of Mission Critical technologies of the rated stage .
- **And** adoption 50% of High Value technologies of the rated stage.
- **And** meet rating criteria for all prior stages.

Results

Respondent distribution across the model stages is V-shaped.

Suggestive of a healthy population of innovators and early adopters within the market, and oversized population of technology adoption laggards that would benefit from this model.

Stage #	1	2	3	4	5
% Respondents	43%	33%	8%	12%	4%

Breadth of technology in use

Typical Stage for most US health systems.

Stage 1 respondents have not yet adopted 90% of "Mission Critical" and 50% of "High Value" Technologies found in the Broad Industry Adoption category

Stage 5 respondents have adopted 90% of "Mission Critical" and 50% of "High Value" technologies across stages 1-5.

The RCM Technology Adoption Model

43% of respondents fall into Stage 1

Stage 1

Industry Average Technology Adoption

- 43% of market is currently operating in Stage 1
- Stage 1 is the starting point for most organizations that leverage the RCM TAM.
- Not yet live with 90% of Mission Critical technologies and 50% of High Value Technologies required for Stage 2.

33% of respondents fall into Stage 2

Stage 2

Eligibility & benefits verification	Patient Access
Patient registration / pre-registration	
Medical necessity/ ABN	
Charge capture	Mid-Cycle
Chargemaster technology	
Discharge planning	Back Office
Claims manager	
• Claims edits	
• Claims clearinghouse	
• Claims status	
Paper patient statements	
Collections management	Analytics
Bad debt collections	
A/R analytics	
Claims analytics	
Collections analytics	
Coding analytics	
Patient volume analytics	

8% of respondents fall into Stage 3

Stage 3

Referral management	Patient Access
Patient portal / mobile app	
Patient identify and address verification	
Pricing transparency (shoppable services + MRFs)	
Patient OOP payment estimation	
Patient financial clearance	
POS payment capture	Mid-Cycle
Charity care evaluation	
Clinical documentation integrity (CDI)	
Clinical documentation - transcription/NLP	Back Office
Utilization Review	
Denials management	
Underpayment recovery	
Consolidated patient statements	
Remittance management	
Complex claims	Analytics
Encounters clearinghouse	
Contract management	
Third-party liability	
Medicare bad debt	
Call center automation/IVR	
Contract analytics	
Denials analytics	
Patient access analytics	

12% of respondents fall into Stage 4

Stage 4

Patient self-scheduling	Patient Access
Prior authorization/certification	
Patient appointment reminders	
Pre-visit Propensity to pay	
Pre-visit payment plan enrollment	
Self-service patient payments (pre-visit)	
Registration quality management	Mid-Cycle
Physician CDI/Coder querying technology	
Predictive CDI Worklist prioritization	Back Office
Post-visit insurance discovery	
Disproportionate share reporting	
Transfer DRG	
Post-visit payment plan enrollment	
Self-service patient payment (post-visit)	
Automated remittance matching	Analytics
Data extraction capabilities	
Drill-down to transaction level capabilities	
Contract modelling	
Physician practice operations analytics	
Uncompensated care analytics	

4% of respondents fall into Stage 5

Stage 5

Pre-visit insurance discovery	Patient Access
Prior authorization automation	
• Automated determination	
• Automated data extraction and submission	
• Prior authorization status monitoring	
Virtual front desk	
Self-triage / care navigation	Mid-Cycle
Clinical documentation - ambient clinical intelligence (ACI)	
Computer assisted physician documentation (CAPD)	
Computer assisted coding	
• ML-based ICD & CPT coding	
• ML-based DRG assignment	
Case management	Back Office
• SDOH risk analytics	
• SDOH referral management	
Predictive denials warnings	
Automated appeals workflows	
End-to-End RCM analytics	
Real-time, near real-time refresh capabilities	Analytics
Patient matching / deduplication capabilities	
Intelligent denials and underpayment root cause analysis	

Key:

Mission Critical

High Value

Analysis and Findings

Analysis

2

Correlate the RCM Technology Adoption Model with financial performance improvement across stages.

Average financial performance against an industry recognized set of KPIs was captured from all respondents.

Average financial performance was calculated and compared across each stage.

Respondents reporting low technology use

Respondents reporting high technology use

Stage #	1	2	3	4	5
% Respondents	42%	25%	17%	16%	16%

*Stage 1 respondents have not yet adopted 90% of "Mission Critical" and 50% of "High Value" Stage 1 technologies.

Results

2

Notable financial performance improvements were detected in 9 key areas.

Organizations falling in Stage 4 or above outperform organizations in Stage 1 in the following areas:

Financial Analysis Snapshot

Financial KPI	Percent Difference Between Organizations at Stage 1 Compared to Organizations at Stage 4 or Above (average)
POS Collections	29% increase
% A/R days > 90	21% reduction
Denials Rate	16% reduction
Cost to Collect	11% reduction
Bad Debt	7% reduction

The RCM Technology Adoption Model

Pre-Read Perceptions



Compared to peers, where would you anticipate placing in your current use of RCM Technology?

0%

25%

50%

75%

100%

Respondents reporting low technology use

Respondents reporting high technology use

Technology Adoption

Stage 1 Industry Average Technology Adoption

33% of respondents fall into Stage 2

8% of respondents fall into Stage 3

12% of respondents fall into Stage 4

4% of Respondents fall into Stage 5

You are at Stage 4

Eligibility & benefits verification	<input type="checkbox"/>	Patient Access
Patient registration / pre-registration	<input type="checkbox"/>	
Medical necessity/ ABN	<input type="checkbox"/>	
Charge capture	<input type="checkbox"/>	Mid Cycle
Chargemaster technology	<input checked="" type="checkbox"/>	
Discharge planning	<input type="checkbox"/>	
Claims manager	<input checked="" type="checkbox"/>	Back Office
• Claims edits	<input checked="" type="checkbox"/>	
• Claims clearinghouse	<input checked="" type="checkbox"/>	
• Claims status	<input type="checkbox"/>	
Paper patient statements	<input checked="" type="checkbox"/>	
Collections management	<input checked="" type="checkbox"/>	
Bad debt collections	<input checked="" type="checkbox"/>	
A/R analytics	<input checked="" type="checkbox"/>	Analytics
Claims analytics	<input checked="" type="checkbox"/>	
Collections analytics	<input checked="" type="checkbox"/>	
Coding analytics	<input checked="" type="checkbox"/>	
Patient volume analytics	<input checked="" type="checkbox"/>	

Referral management	<input type="checkbox"/>	Patient Access
Patient portal / mobile app	<input checked="" type="checkbox"/>	
Patient identify and address verification	<input checked="" type="checkbox"/>	
Pricing transparency (shoppable services + MRFs)	<input type="checkbox"/>	
Patient OOP payment estimation	<input checked="" type="checkbox"/>	
Patient financial clearance	<input checked="" type="checkbox"/>	
POS payment capture	<input checked="" type="checkbox"/>	
Charity care evaluation	<input checked="" type="checkbox"/>	
Clinical documentation integrity (CDI)	<input checked="" type="checkbox"/>	Mid Cycle
Clinical documentation - transcription/NLP	<input type="checkbox"/>	
Utilization Review	<input checked="" type="checkbox"/>	
Denials management	<input checked="" type="checkbox"/>	Back Office
Underpayment recovery	<input checked="" type="checkbox"/>	
Consolidated patient statements	<input checked="" type="checkbox"/>	
Remittance management	<input checked="" type="checkbox"/>	
Complex claims	<input type="checkbox"/>	
Encounters clearinghouse	<input type="checkbox"/>	
Contract management	<input type="checkbox"/>	
Third-party liability	<input checked="" type="checkbox"/>	
Medicare bad debt	<input checked="" type="checkbox"/>	
Call center automation/IVR	<input checked="" type="checkbox"/>	
Contract analytics	<input checked="" type="checkbox"/>	Analytics
Denials analytics	<input checked="" type="checkbox"/>	
Patient access analytics	<input checked="" type="checkbox"/>	

Patient self-scheduling	<input type="checkbox"/>	Patient Access
Prior authorization/certification	<input type="checkbox"/>	
Patient appointment reminders	<input checked="" type="checkbox"/>	
Pre-visit Propensity to pay	<input type="checkbox"/>	
Pre-visit payment plan enrollment	<input type="checkbox"/>	
Self-service patient payments (pre-visit)	<input checked="" type="checkbox"/>	
Registration quality management	<input type="checkbox"/>	
Physician CDI/Coder querying technology	<input checked="" type="checkbox"/>	Mid Cycle
Predictive CDI Worklist prioritization	<input type="checkbox"/>	
Predictive denials warnings	<input checked="" type="checkbox"/>	Back Office
Post-visit insurance discovery	<input checked="" type="checkbox"/>	
Disproportionate share reporting	<input checked="" type="checkbox"/>	
Transfer DRG	<input checked="" type="checkbox"/>	
Post-visit payment plan enrollment	<input type="checkbox"/>	
Self-service patient payment (post-visit)	<input checked="" type="checkbox"/>	
Automated remittance matching	<input checked="" type="checkbox"/>	
Data extraction capabilities	<input checked="" type="checkbox"/>	Analytics
Drill-down to transaction level capabilities	<input checked="" type="checkbox"/>	
Contract modelling	<input type="checkbox"/>	
Physician practice operations analytics	<input checked="" type="checkbox"/>	
Uncompensated care analytics	<input checked="" type="checkbox"/>	

Pre-visit insurance discovery	<input type="checkbox"/>	Patient Access
Prior authorization automation	<input type="checkbox"/>	
• Automated determination	<input type="checkbox"/>	
• Automated data extraction and submission	<input type="checkbox"/>	
• Prior authorization status monitoring	<input type="checkbox"/>	
Virtual front desk	<input checked="" type="checkbox"/>	
Self-triage / care navigation	<input checked="" type="checkbox"/>	
Clinical documentation - ambient clinical intelligence (ACI)	<input checked="" type="checkbox"/>	Mid Cycle
Computer assisted physician documentation (CAPD)	<input type="checkbox"/>	
Computer assisted coding	<input checked="" type="checkbox"/>	
• ML-based ICD & CPT coding	<input type="checkbox"/>	
• ML-based DRG assignment	<input type="checkbox"/>	
Case management	<input checked="" type="checkbox"/>	
• SDOH risk analytics	<input checked="" type="checkbox"/>	
• SDOH referral management	<input checked="" type="checkbox"/>	
Automated appeals workflows	<input checked="" type="checkbox"/>	Back Office
End-to-End RCM analytics	<input checked="" type="checkbox"/>	Analytics
Real-time, near real-time refresh capabilities	<input checked="" type="checkbox"/>	
Patient matching / deduplication capabilities	<input checked="" type="checkbox"/>	
Intelligent denials and underpayment root cause analysis	<input checked="" type="checkbox"/>	

Key: Mission Critical High Value Fully Deployed Limited Use Implementing in next 12 months Do not have

Financial Benchmarking

Your Results: RCM Technology Adoption Model Report

Overall Results

Your financial performance trails RCMTAM Stage 4/5 health systems in several key areas.

Financial KPI	Performance Difference Between your KPIs and Stage 5 Performance			
	Reported	Normalized	Stage 4/5 Average	Diff.
POS Collections (% NPR)	0.6% - 1.0%	0.8%	1.80%	125% improvement
Clean Claims Rate (%)	91% - 95%	93%	84.67%	✓
A/R Days (# Days)	51 - 55	53	43	19% reduction
% A/R days > 90	26%-30%	28.00%	9.67%	65% reduction
Denials (% NPR)	5%	5%	1.47%	100% reduction
Cost to Collect (%)	2.1%-2.5%	2.30%	1.47%	36% reduction
Days Cash on Hand (# Days)	151-200	175	108.33	✓
Bad Debt (% NPR)	1.6% - 2.0%	1.80%	1.80%	✓

Critical Processes Audit | Your Results: RCM Technology Adoption Model Report

You Already Have This

Mission Critical

High Value



Critical Processes Audit | Your Results: RCM Technology Adoption Model Report

You Already Have This

Mission Critical

High Value



Modernization Roadmap

Your Results: RCM Technology Adoption Model Report

Work	Year 1				Year 2		Year 3	
Scheduling/ Pre-Registration	Virtual Intake	Medical Necessity / ABN	Prior Authorization Automation	Pre-Visit Insurance Discovery	Pre-Visit Payment Plan Enrollment			
Charge Capture	Charge Capture Audit						Outcomes Validation Assessment Modernization Recalibration for Years 4-6	
Final Bill, Appeals and Follow Up	Denials Management	Automated Claims Stating						
Analytics	Denials Analytics	A/R Analytics	Claims Analytics	End-to-End Analytics	End-to-End RCM Analytics			

Key:

Mission Critical

High Value

ABC Health Planned Implementation 12-18 months

Summary

What It All Means

Healthcare financial leaders need to embrace disruption

- Pre-pandemic visit volumes show no signs of returning
- Negative margins will continue to erode cash on hand
- Health system financial leaders will need to establish a bold vision

New market entrants are competing for patient loyalty with better digital experiences

- Visit volumes are shifting to the outpatient market at an increasing rate
- New entrants are competing for patient loyalty
- Improved outcomes through sticky between visit engagement tactics

Self-service patient tools are seen as a win-win; poised for rapid adoption

- Innovative leaders are looking at virtual intake solutions, patient payment solutions, and other capabilities
- Empower patients with digital self-service tools that reduce administrative burden for RCM staff, while boosting satisfaction

RCM Platforms are the quickest paths to restoring profitability

- Technology-enabled optimization increases revenue and reduces costs
- Adoption of RCM technology, designed to automate resolution in prior authorizations, denials and underpayments
- RCM Platform players are enabling this transformation through vendor consolidation, intelligent automation, and centralized end-to-end data analytics environments

The RCMTAM introduces a peer-reviewed, data-driven approach to rapid modernization

- Complacency is no longer an option - health system financial leaders need to move forward with modernization efforts
- RCMTAM provides a clear path forward in a market that lacks best practice research guiding broad-based digital transformation efforts

Questions?

Thank you!

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