



Leveraging Predictive Analytics Throughout the Entire Revenue Cycle

September 23, 2017

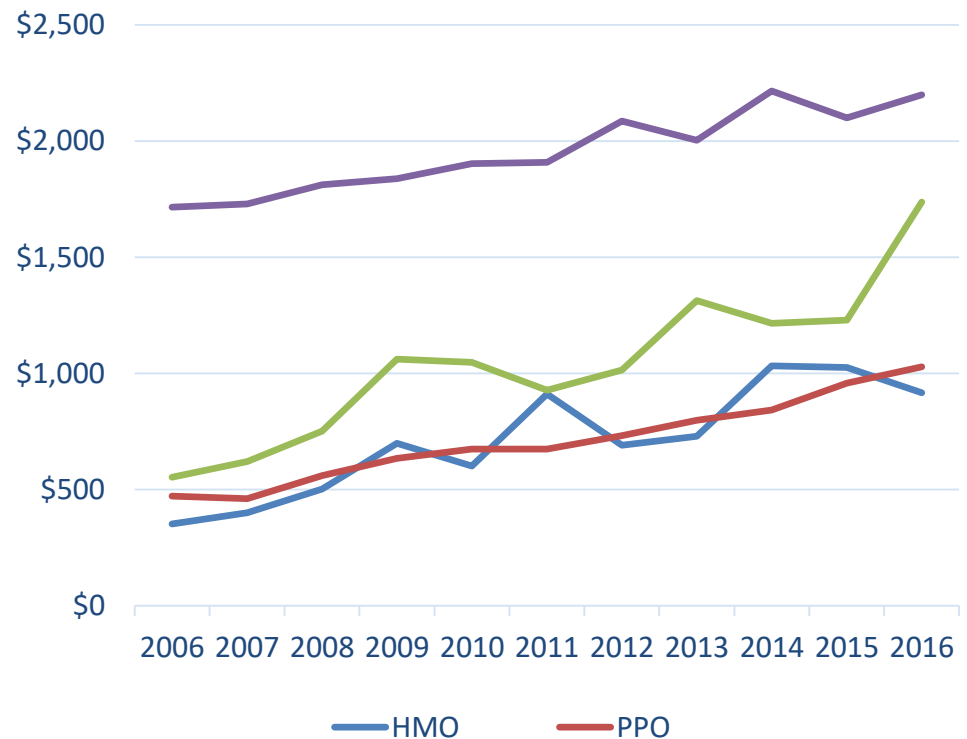
BECKER'S _____
Hospital Review

Consumer Driven Healthcare

Healthcare is rapidly “consumerizing”, with implications across the business model

- Since 2006, deductible increase:
 - HDHP +28%
 - HMO + 161%
 - PPO +178%
 - POS +214%
- Annual deductibles virtually all \$1,000 or higher
- High Deductible plans now 29% of Employer-sponsored lives

Average Annual Deductible for Single Coverage by Plan Type



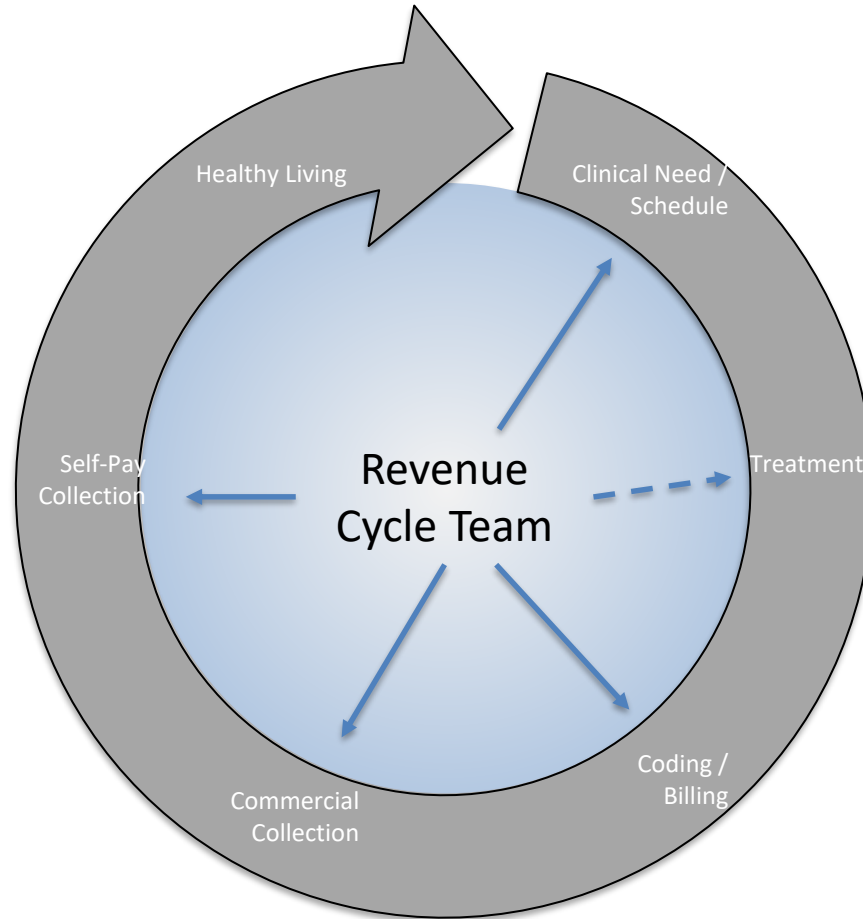
Note: Average general annual health plan deductibles for PPOs, POS plans, and HDHP/SOs are for in-network services.
Source: Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 2006-2016.



Revenue Cycle and Patient Relationship Management

Revenue cycle interestingly one of the few functions that engages patients across the entire encounter and across multiple care sites

Revenue Cycle Patient Engagement



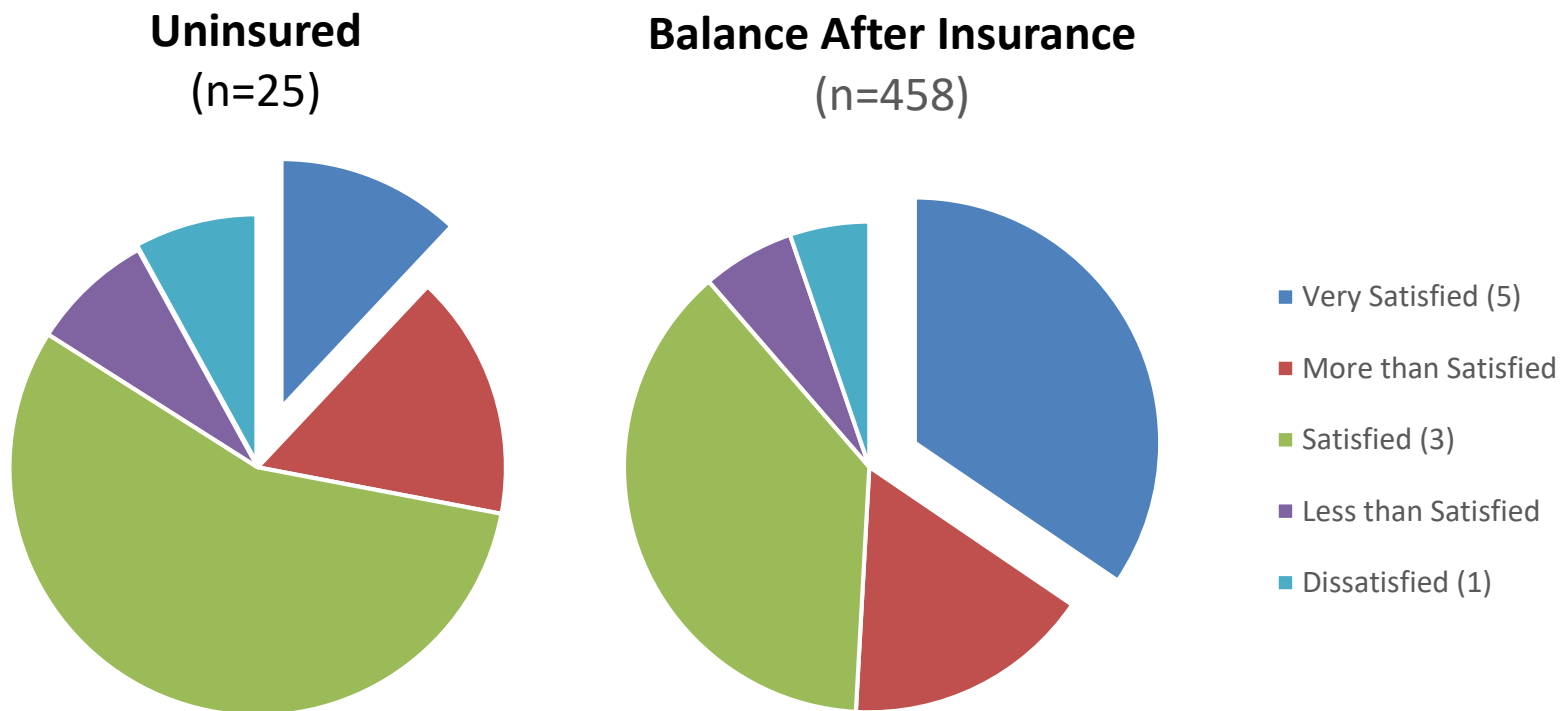
Agenda

- Market Feedback
- Data Innovation
- Components of success

Consumer Satisfaction with the Billing Process

Satisfaction better among BAI, but still not what a world-class consumer business would consider excellent

- BAI: 35% rank “5” and 49% are “3” or less

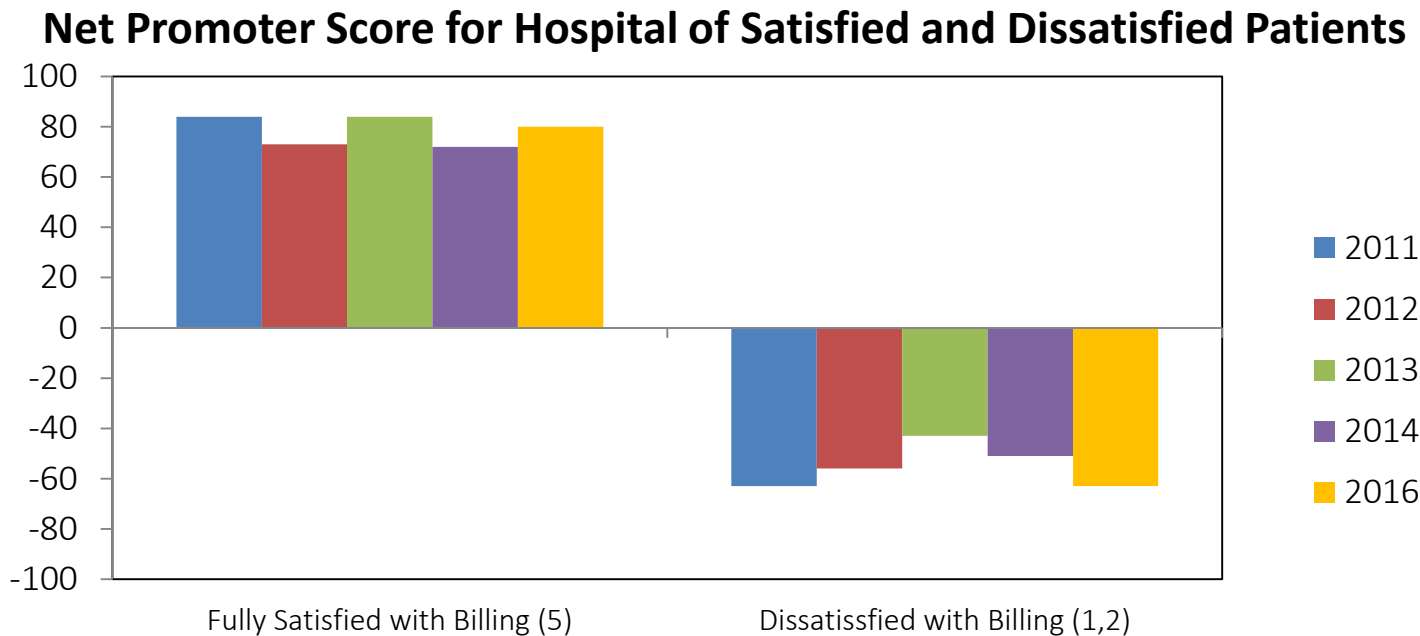


Source: Connance Consumer Survey, August 2016

Consumer Billing Satisfaction and

Continue to see that satisfaction in the business process creates promoters and dissatisfaction detractors

- Overall 2016 NPS: 17
- Long term trend



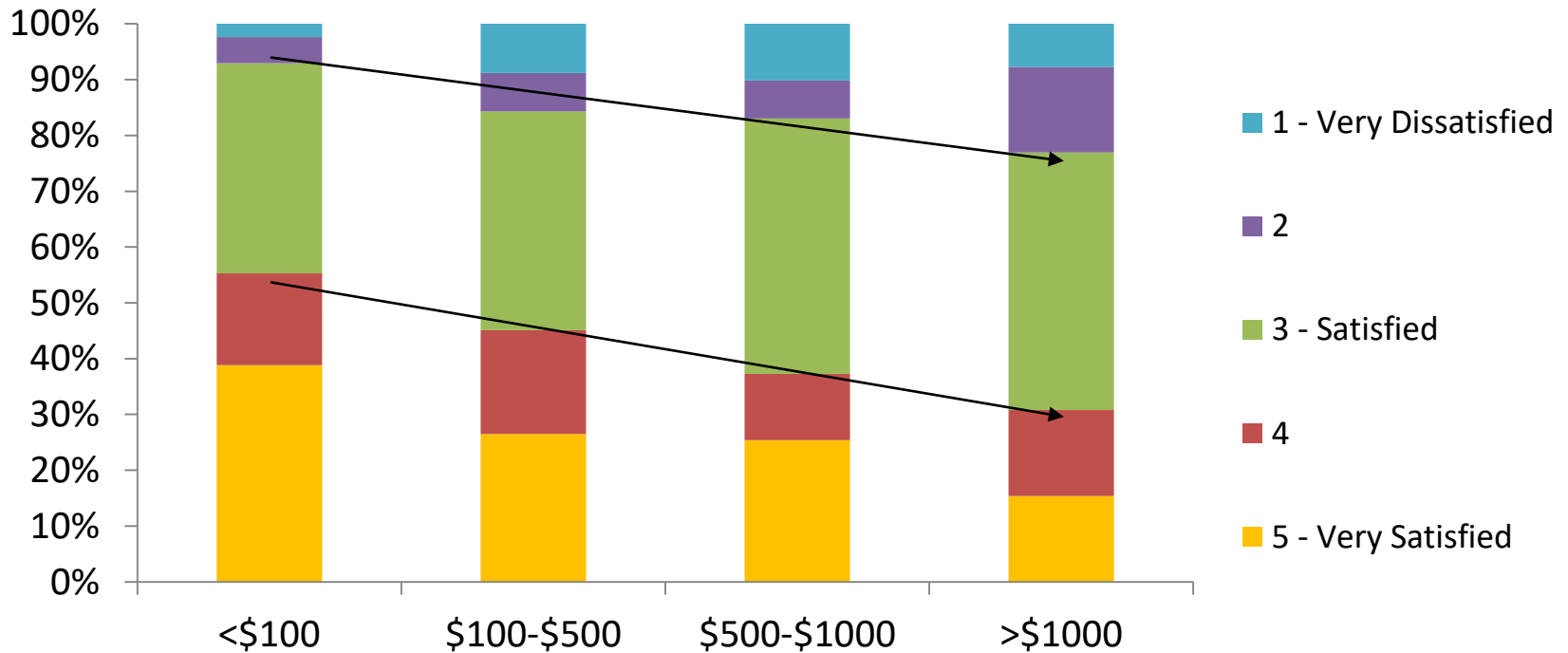
Source: Connance Consumer Survey, August 2016



Consumer Satisfaction by Amount

As balances rise, attention to billing process and performance increases

Satisfactions with the Billing Process By Balance Due

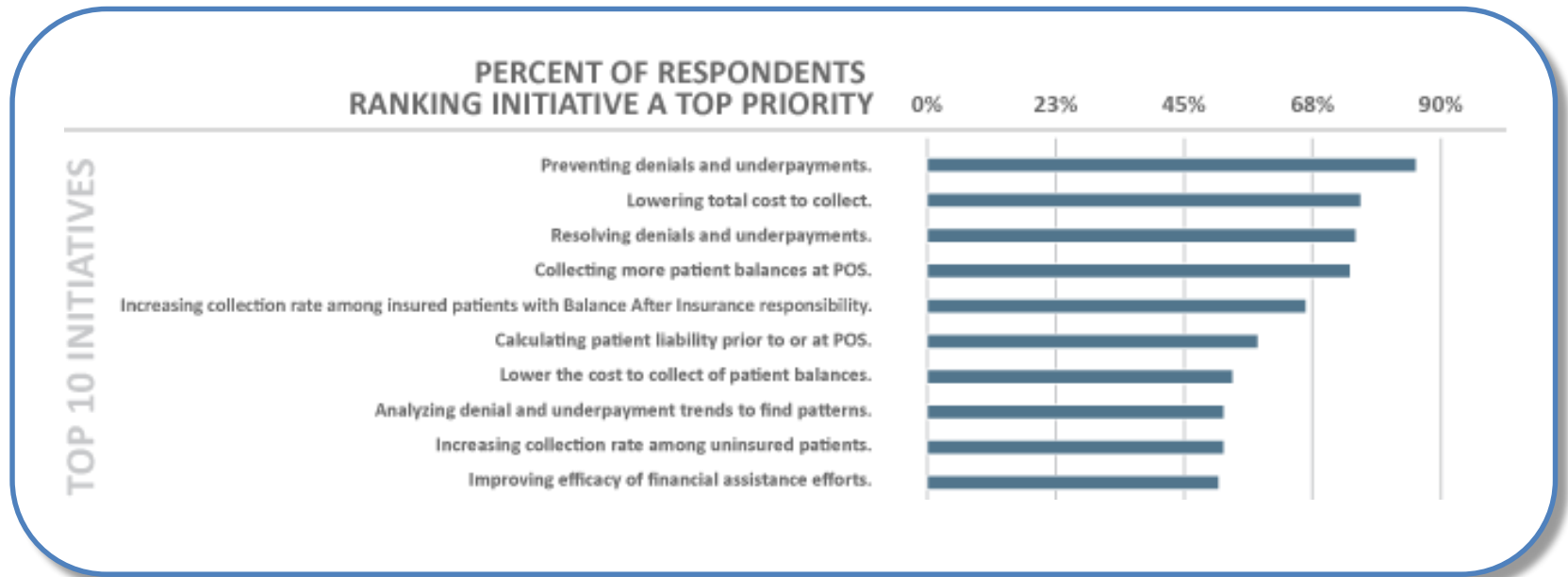


Source: Connance Consumer Survey, August 2016

Priorities Among Healthcare Finance

Among survey of 100 CFOs and VPs of RCM, patient revenue key but...

- “Preventing denials and underpayments” top initiative for 81%
- 2 of the top 3 initiatives were related to denial management.
- 4 of the top 10 initiatives were related to collecting patient revenue



The Challenge

The Executive's view...

- Increasing patient financial engagement
 - Effectively the “profits”
 - Costly to resolve
 - Lowest overall yielding
- Denials cash-flow critical
- No room in the budget
- Just invested in new EMR

The Path to Bright...

- Engage consumer efficiently
- Eliminate waste
- Focus on Net Cash
 - All payors matter
 - Recovery less cost
- Data, data and data!

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Places to Leverage Data Differently

■ Up-Front

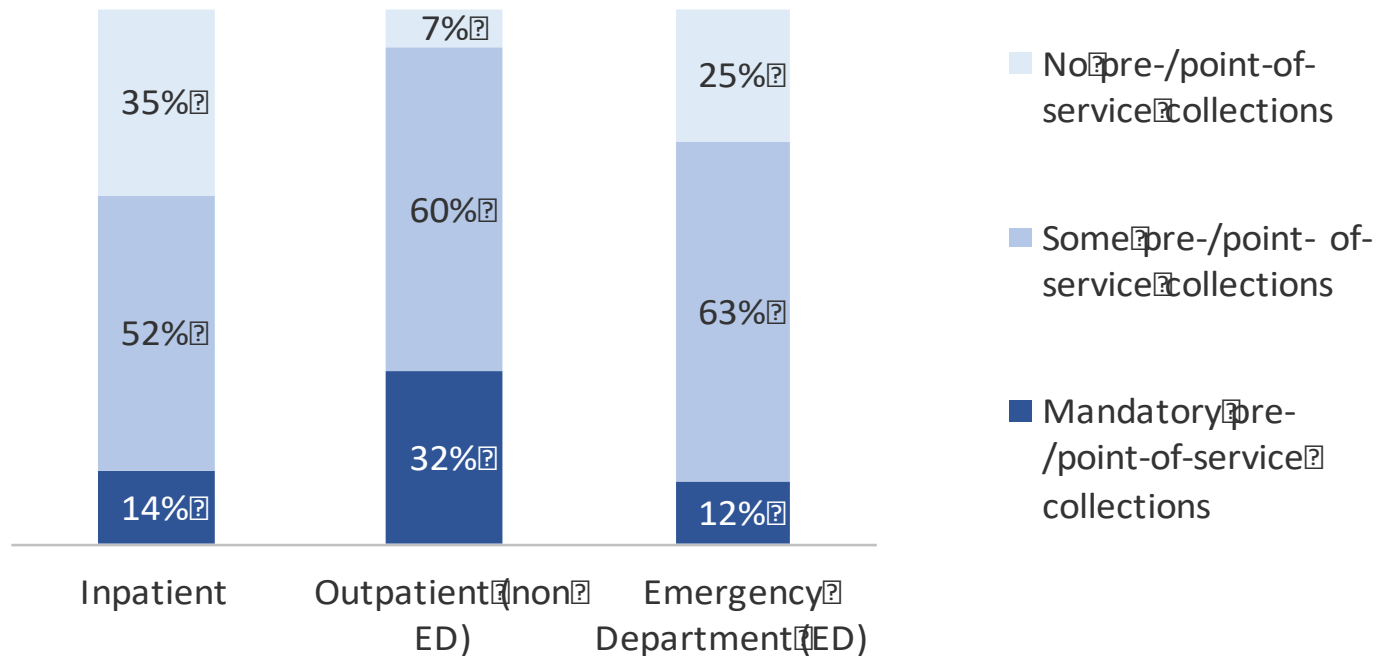
- Middle
- Back
- New World

- Pre-Service patient engagement
- Educate and Prepare
- Resolution where possible
- Financial Assistance

Upfront Collections in Hospital Facilities

Early patient engagement is becoming the norm now across the industry

Pre-/Point-of-Service Collections by Service Line

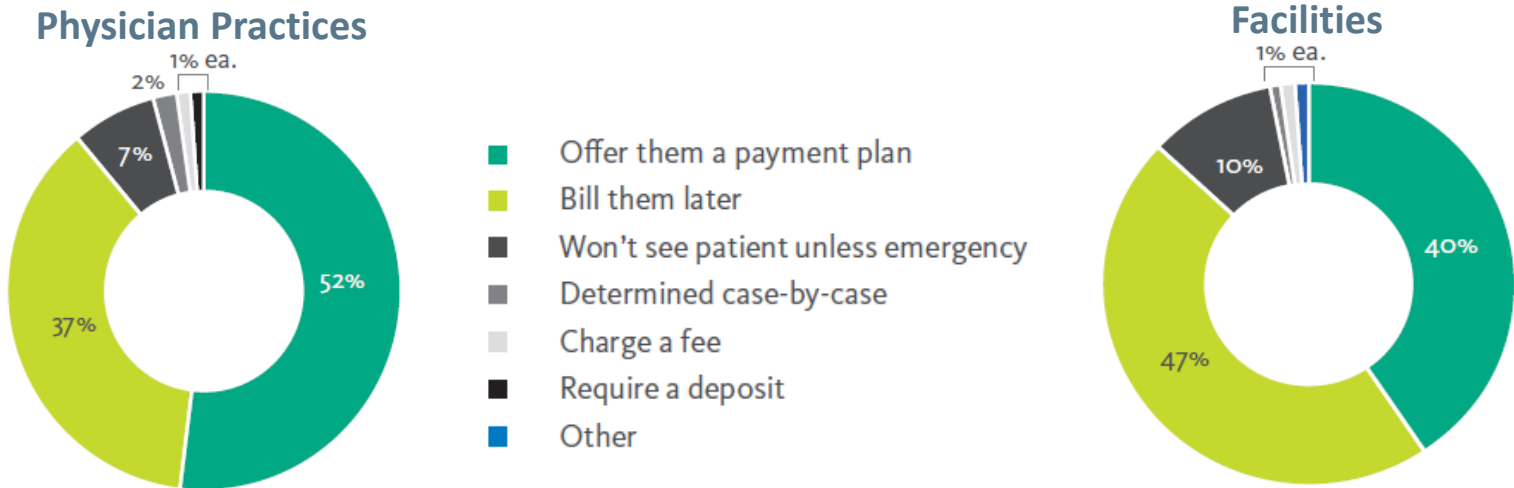


Source: HFMA's "Self Pay and The Benefits of Prospective Patient Engagement," hfma.org/self-pay-study, 2016.



Up Front Patient Payment Policies

Significant portion of patients are unable to pay in full up front and payments plans are critical tool



Avg. Percent of Patients Who Can Pay Full Requested Amount



Payment Plan Optimization

Analytic solutions develop better payment plan options

- Fixed-design payment plans average 40% delinquency rate
 - Costly and common “black hole” for patient accounts
- How about using data to develop “win-win” option
- Algorithm looks across all feasible scenarios and identified rank ordered list of 3 plans for maximum value
- Leverage in pre-service of point-of-service applications

The screenshot displays a 'Suggested Plans' interface for an agreement for 'Knee Revision 1 (27334, 27446)' with an estimated patient responsibility of \$1,288.00. It lists three suggested plans:

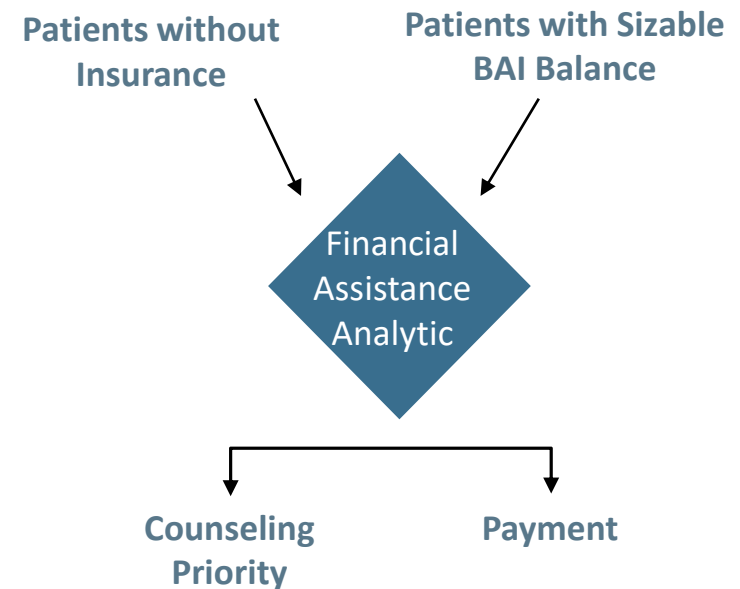
- Option 1:** Upfront payment of \$1,288. Includes 'MODIFY' and 'SELECT' buttons.
- Option 2:** Upfront payment of \$258 and a Payment Plan of \$1,030. Includes 'MODIFY' and 'SELECT' buttons.
- Option 3:** Upfront payment of \$516, a Payment Plan of \$644, and a Lending amount of \$128. Includes 'MODIFY' and 'SELECT' buttons.

Each option includes a 'To be paid in 6 installments' note with a date range (08/15/2017 - 08/31/2018).

Financial Assistance Analytics

Analytic solutions to identify patients meriting financial assistance according to facility policies and government regulations

- People living in poverty unique challenge
 - Non-responsive to outreach
 - Lack traditional data profiles
 - Significant oversight burden
 - Expensive to process manually
- Typically, 30% of bad debt accounts qualify for financial assistance
- Financial qualification \neq Propensity to Pay
- Predictive models specifically built to assess patient qualification for financial assistance
 - Support community benefit per IRS 990
 - Predict poverty, household income, assets in consistent and fair manner
 - Calibrated to local market and facility-specific policies and procedures
- Deployable up front for eligibility prioritization or at Bad Debt for presumptive charity



Places to Leverage Data Differently

- Up-Front

- Middle

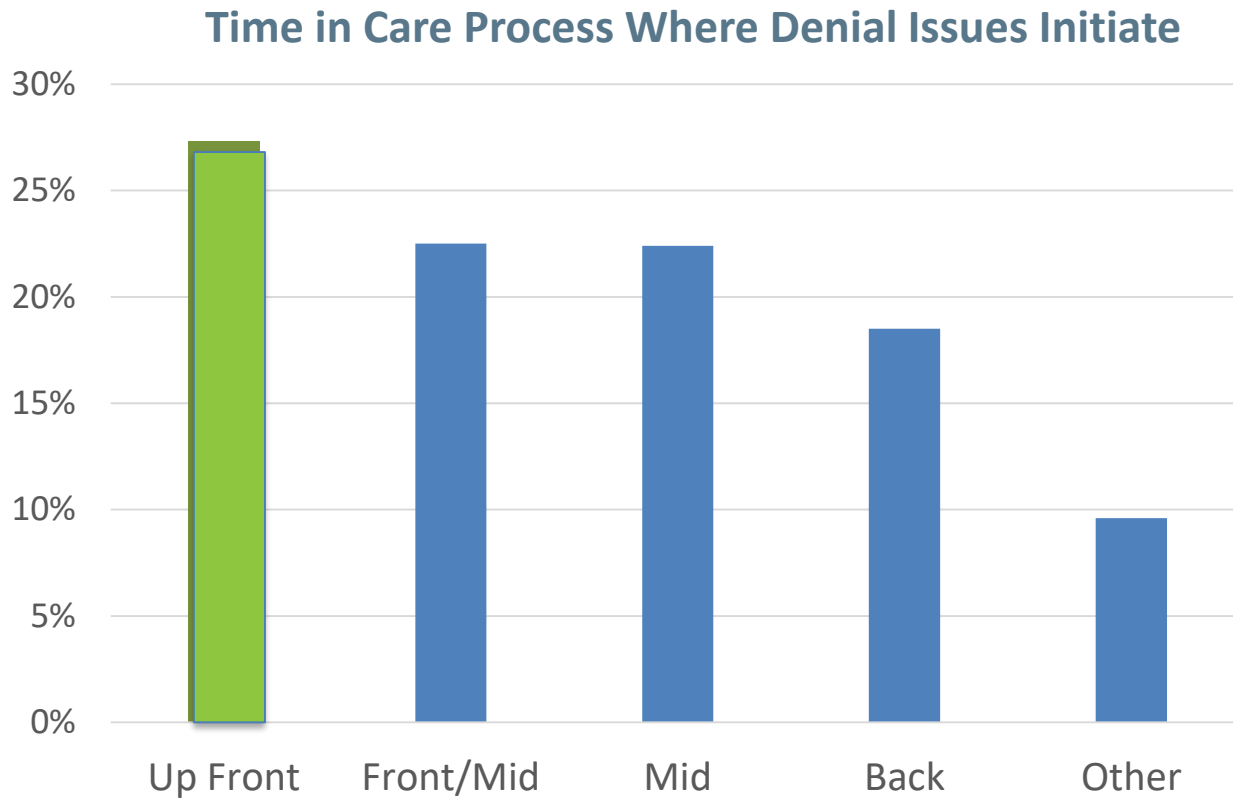
- Back

- New World

- Denial Management
 - Not going away
 - Time delay
 - Budget investment
- Recovery driven strategy

Denial Sources

50-70+% of denials are rooted after patient arrival

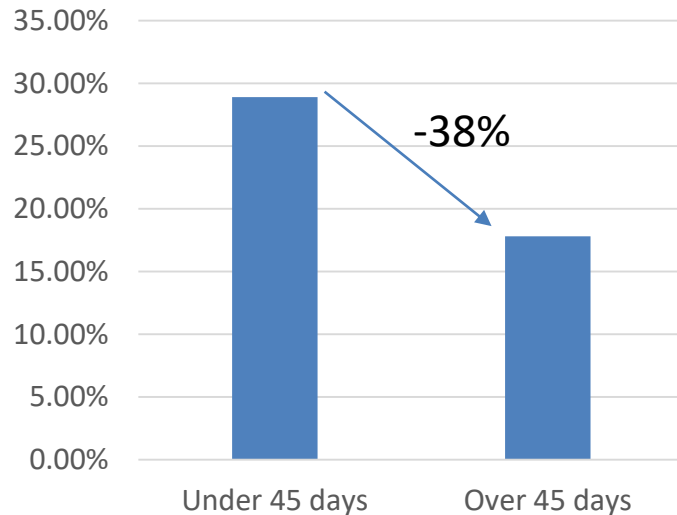


Source: Change Healthcare Healthy Hospital Revenue Cycle Index, June 2017

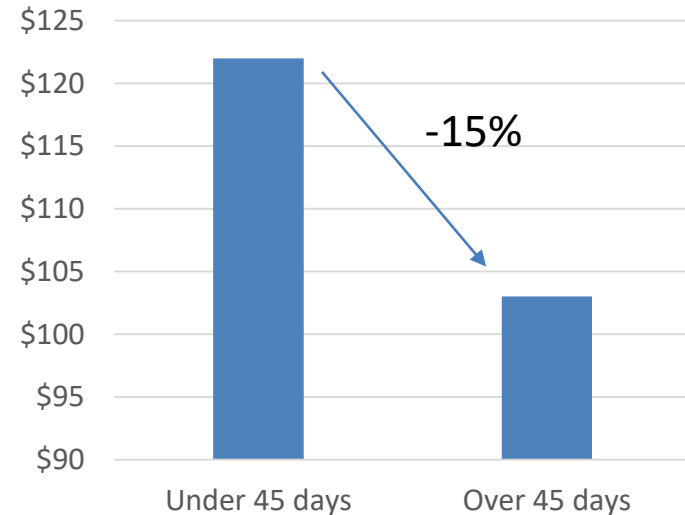
Yield Impact on Early-Out Bill Drop Timing

When accounts linger in denial follow-up, it significantly impacts patient balance recovery

Collection Rate on Patient Portion Based on Days in Claim Follow-up



Unit Yield on Patient Portion Based on Days in Claim Follow-up



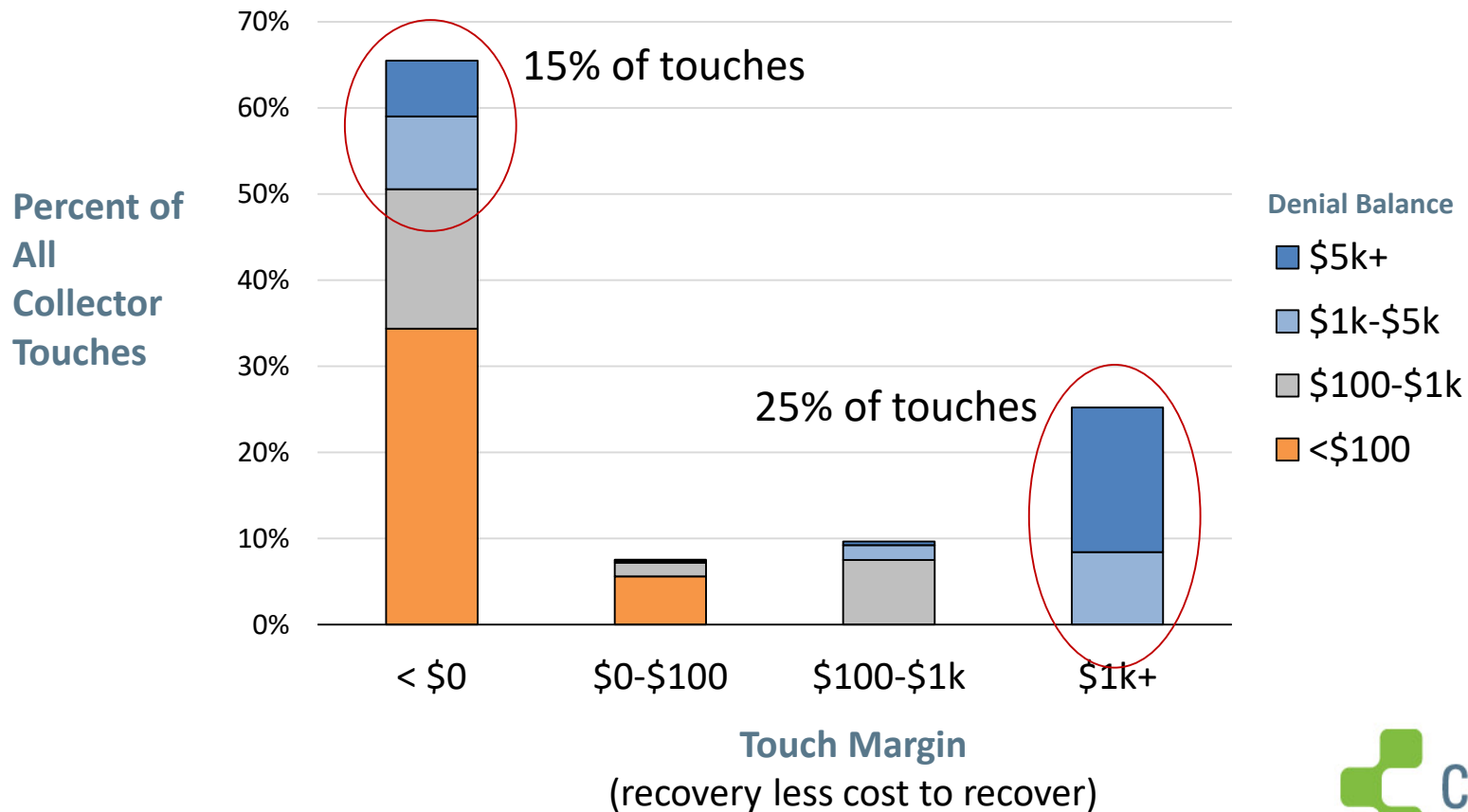
Source: Connance analysis of Patient recovery following denial follow-up efforts



Denial Follow-up Economics

Much denial follow-up work has sketchy ROI (cost vs. incremental payor cash)

- 28% of \$5,000+ touches have negative ROI
- 50% of \$1,000-\$5,000 have negative ROI

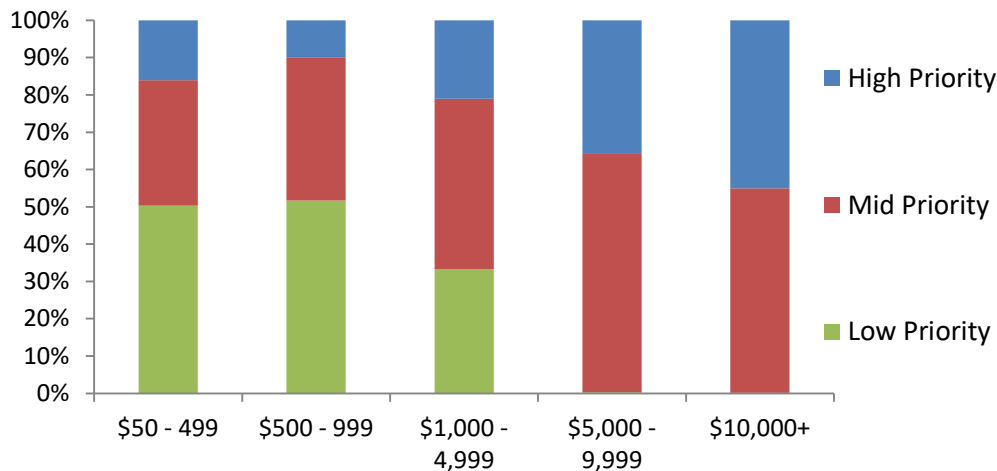


Value Driven Denial Operations

Applying recovery-type data science to denials demonstrates the difference between “balance” and “value” even in a contracted revenue stream

- Flaw in standard Balance-Age follow-up routines

Predictive Segmentation by Balance Range



Assumption

- Value = Balance

Reality

- Probability not related to Balance
- Value = Balance x Probability

Impact on AR

- High value claims reduce AR quickly
- Mid value claims reduce AR modestly
- Low value claims pushed out/contingent

- Reason Code splits also have similar mix of Hi/Mid/Low segments

Denial Follow-up Economics

Applying recovery-based logic to denial follow-up reduces workload significantly

- Reallocate touches (cost of \$5-30 per touch) on 53% of claims

Expected Recovery Driven Segmentation

	# of Claims	Post Denial Payments	Payment per Claim	% of Claims	% of Payments
High Priority	6,791	\$7,149,986	\$1,053	25%	86%
Low Priority	5,968	\$899,844	\$151	22%	11%
No Follow Up	14,098	\$321,482	\$22	53%	3%

Source: CHRISTUS Health ANI Presentation, 2017

Places to Leverage Data Differently

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- Middle

- Back

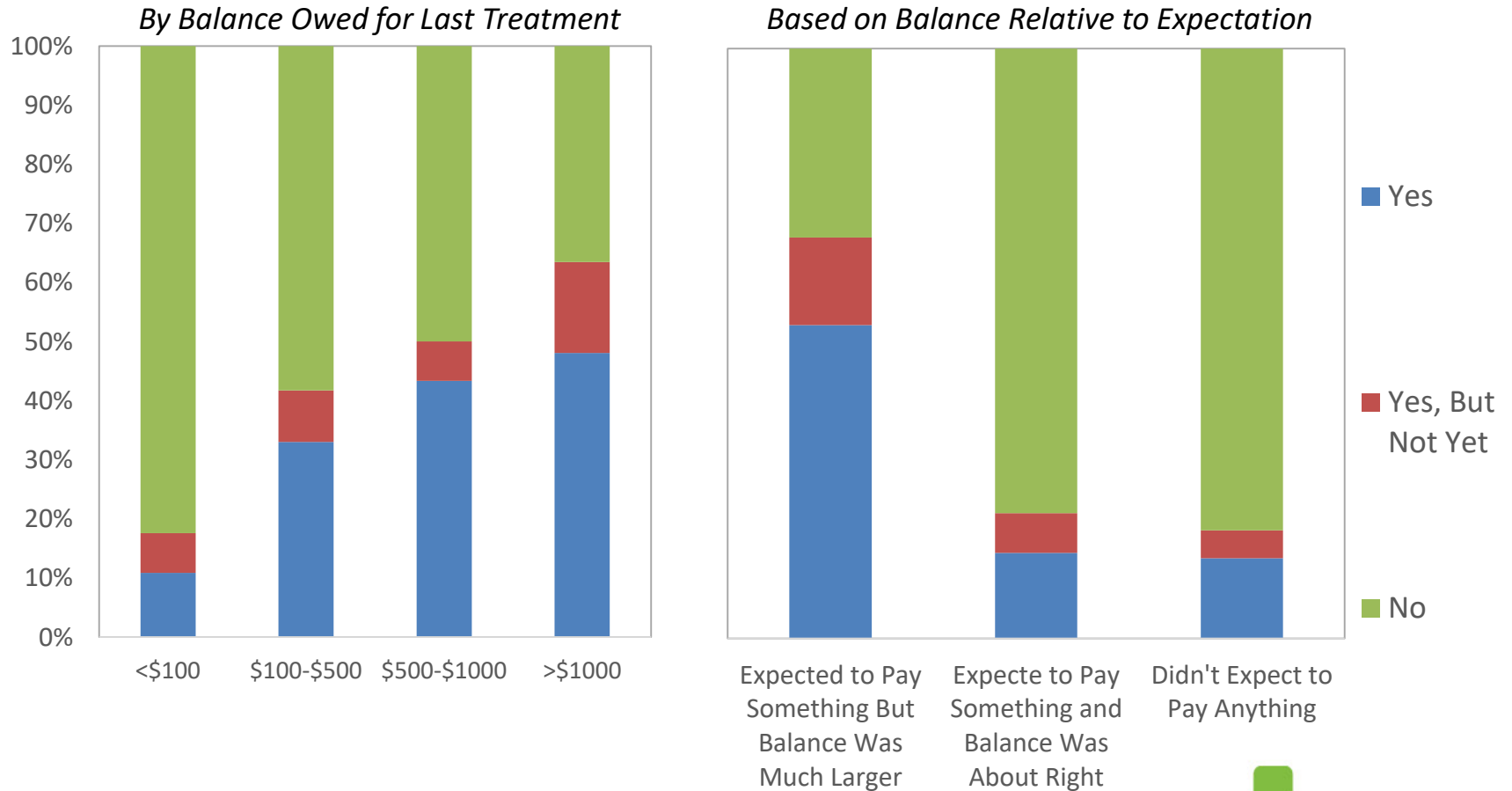
- New World

- Continuing volume
- Beyond basic Propensity-to-Pay
- Other analytics emerging

Influence of Balance Due on Consumer Activity

Increasing balance drives up business office engagement

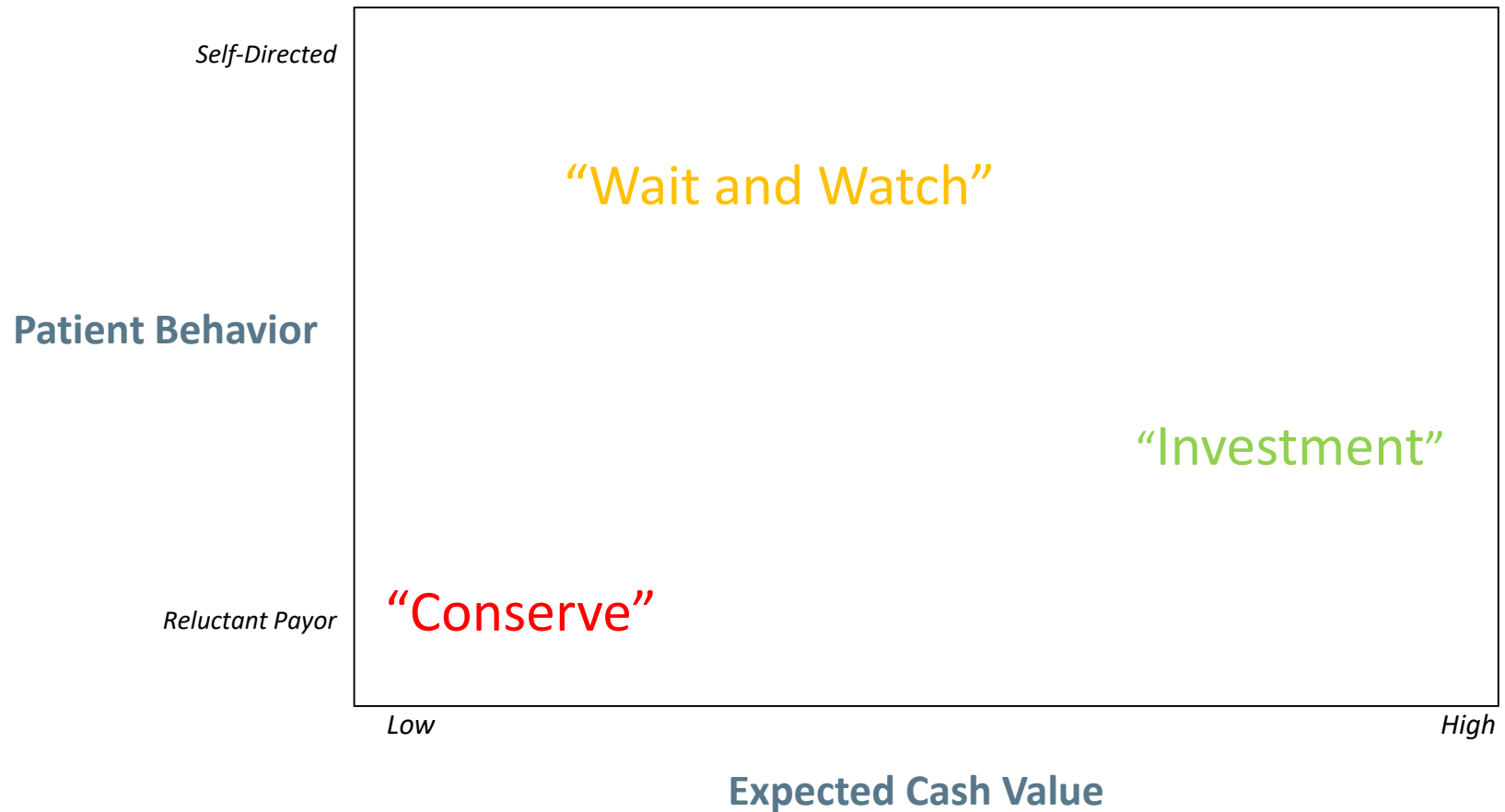
Decision to Reach Out to Business Office for Questions About the Bill



Source: Connance Consumer Survey, August 2016

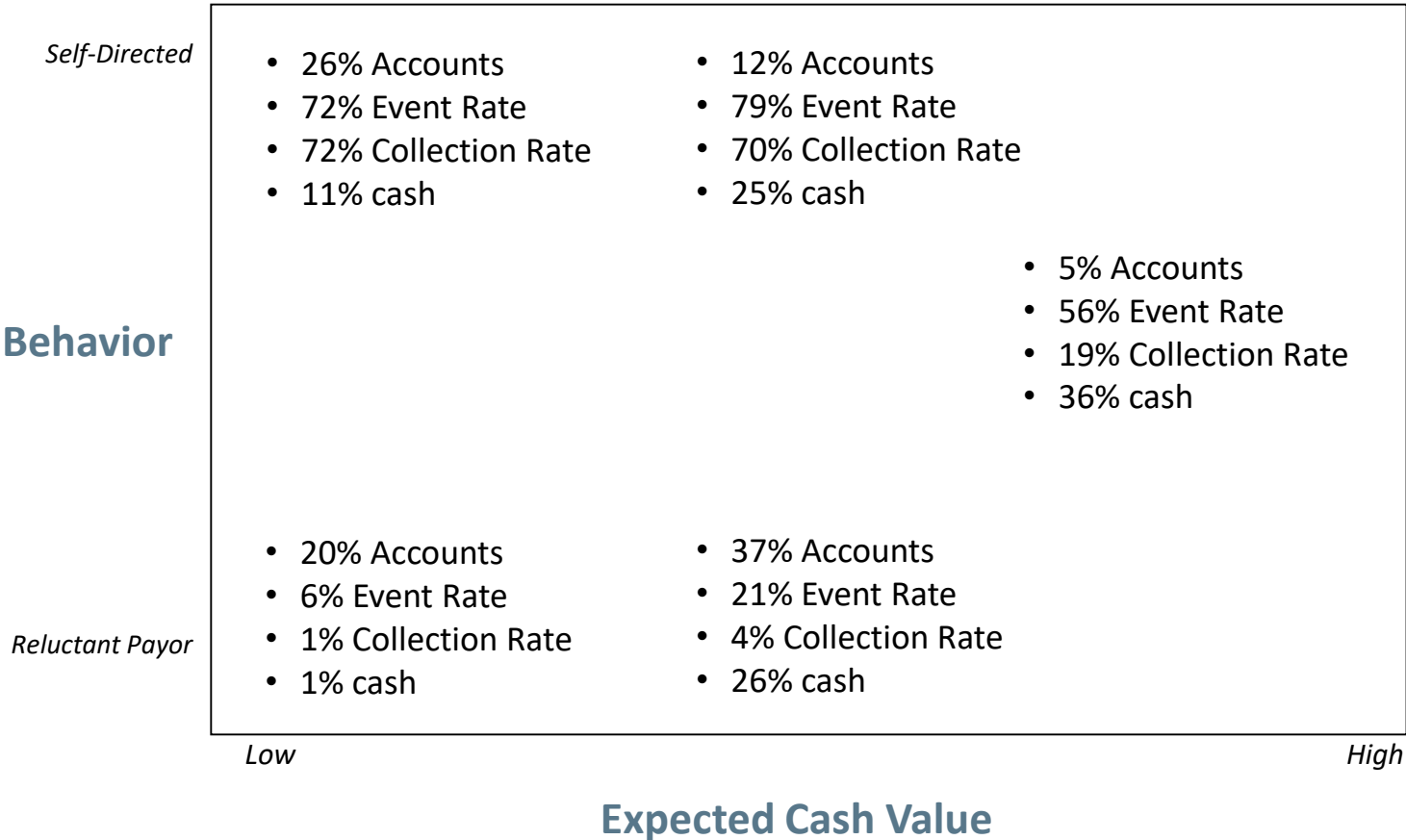


Patient-Pay Collection ROI Segmentation



Patient-Pay Collection ROI Segmentation

Patient Behavior



Patient Pay Segmentation Case Study

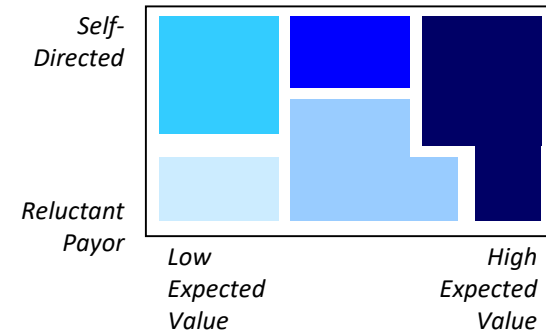
Deployed predictive technology to focus effort against high ROI opportunities

Pre: Traditional Balance-Based logic

\$\$\$		
\$\$		
\$		
	Uninsured	BAI

- Balance vs. uninsured/BAI
- Everyone received same letter sequence
- Calling program focused on higher balance accounts

Post: Collection ROI-Based Strategy

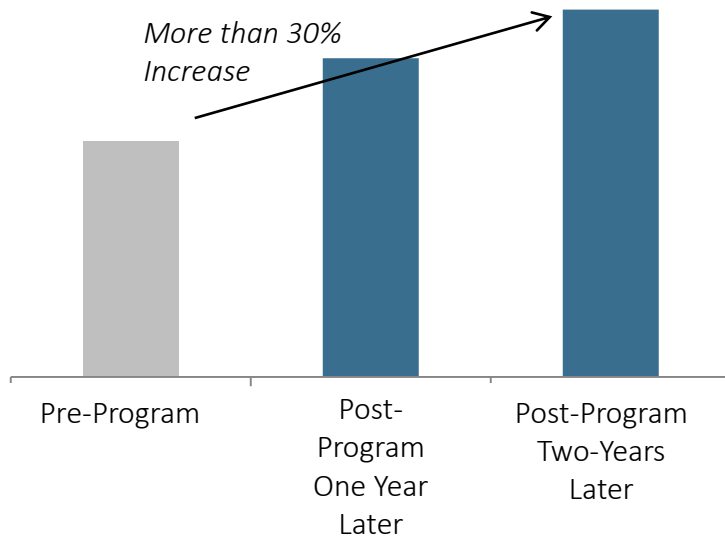


- Cost to collect vs. Expected cash value
- Five segments, upside value whenever marginal effort applied
- Each segment a unique sequence of letters, calling and messages to match opportunity and need

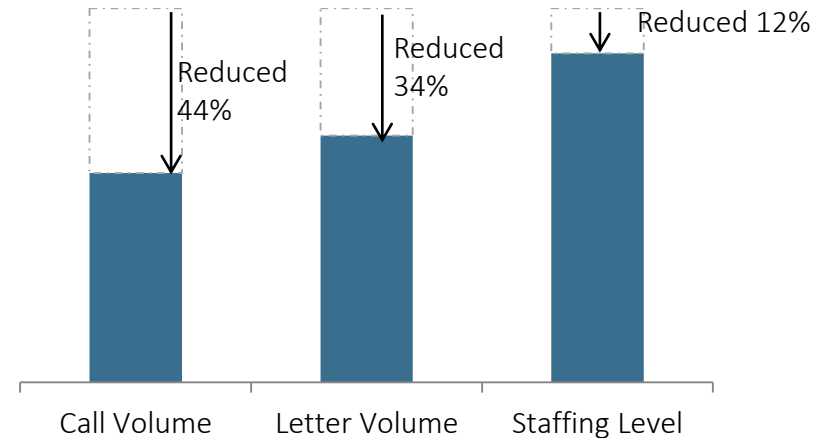
Patient-Pay Collection Segmentation Case Study

Transformed collection performance by targeting activity against highest-value opportunities

Average \$ Collected Per Account



Change in Operating Statistics

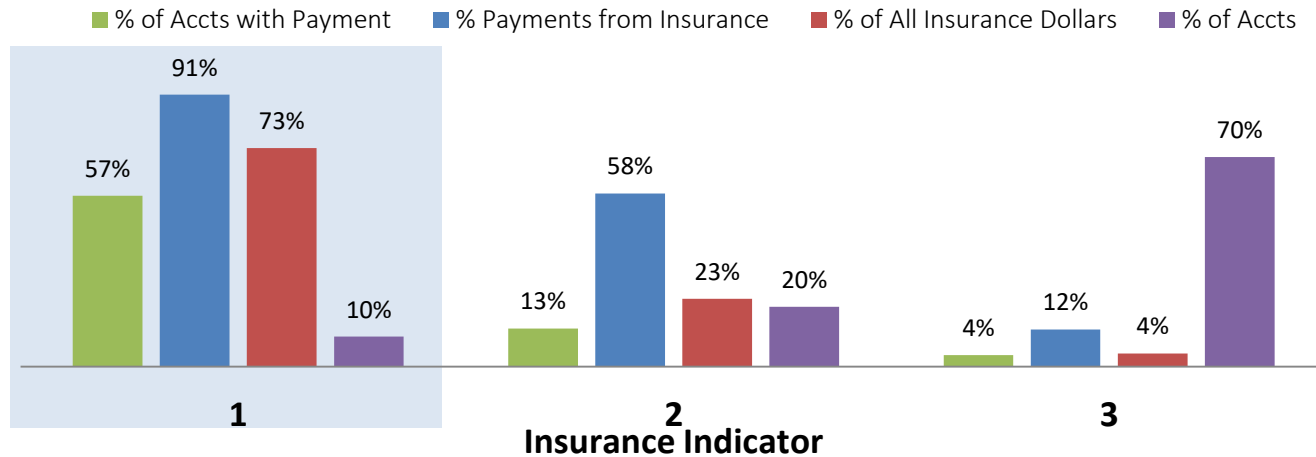


Insurance Flag Analytic

Indicator to identify the subset of accounts likely to have missed insurance

- **Prioritize Segment 1:** 10% of accounts that constitute 70+% of all found insurance dollars. ~60% of patients in this group will make a payment and 90% of this is insurance. High ROI group.
- **Deprioritize Segment 3:** 70% of accounts which contribute only 12% of insurance money. Low ROI

Found Insurance By Indicator Value



Indicator Value	Workflow implications
1	Proactive outreach to patient to identify and bill insurance
2	Enhanced messaging to encourage insurance identification
3	Focus on patient collections, standard insurance messaging

Some Thoughts and Ideas

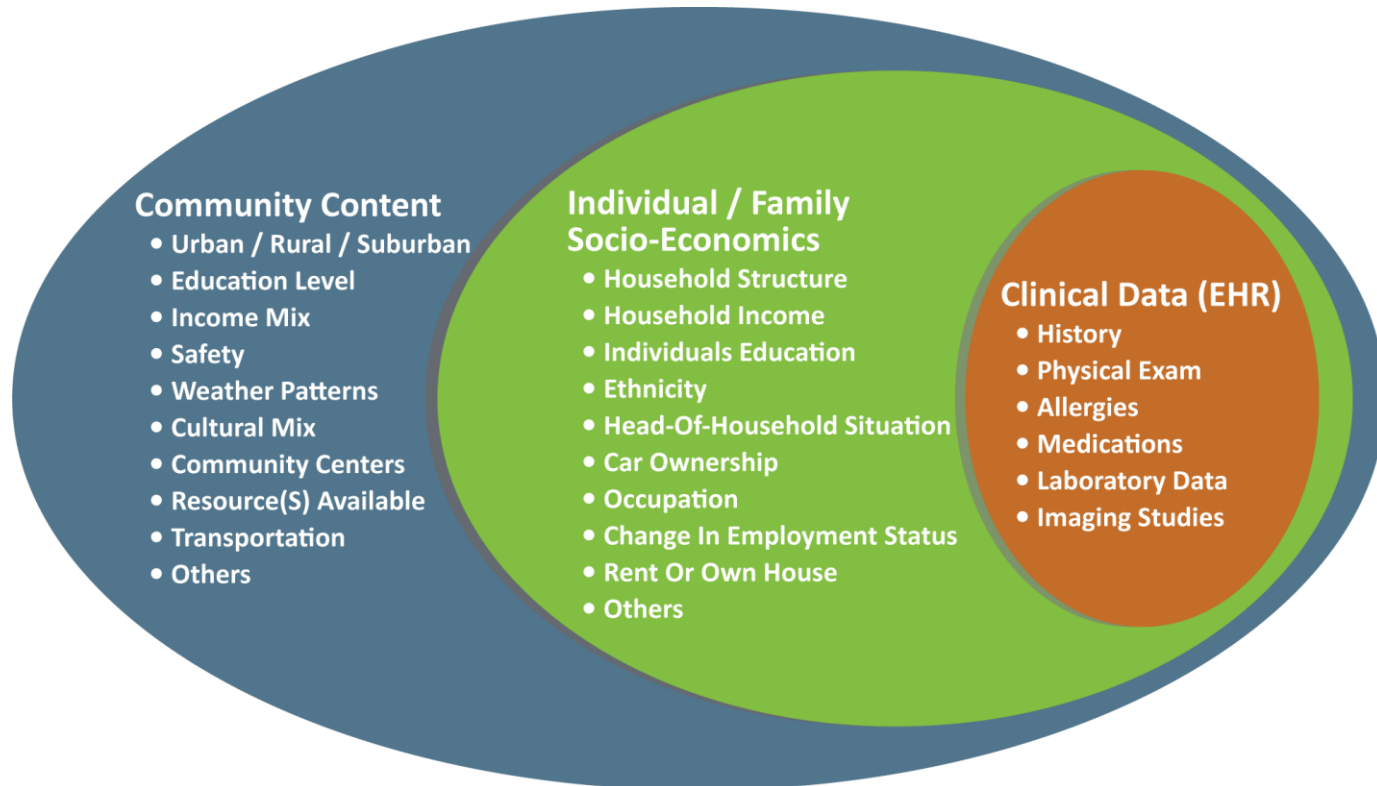
- Up-Front
- Middle
- Back

■ New World

- Social determinants
- Readmission management
- Patient engagement

Consumer Social Determinants and Health

Key elements that contribute to the sustained health and financial engagement of a patient often missing from the core patient record and IT systems of a provider



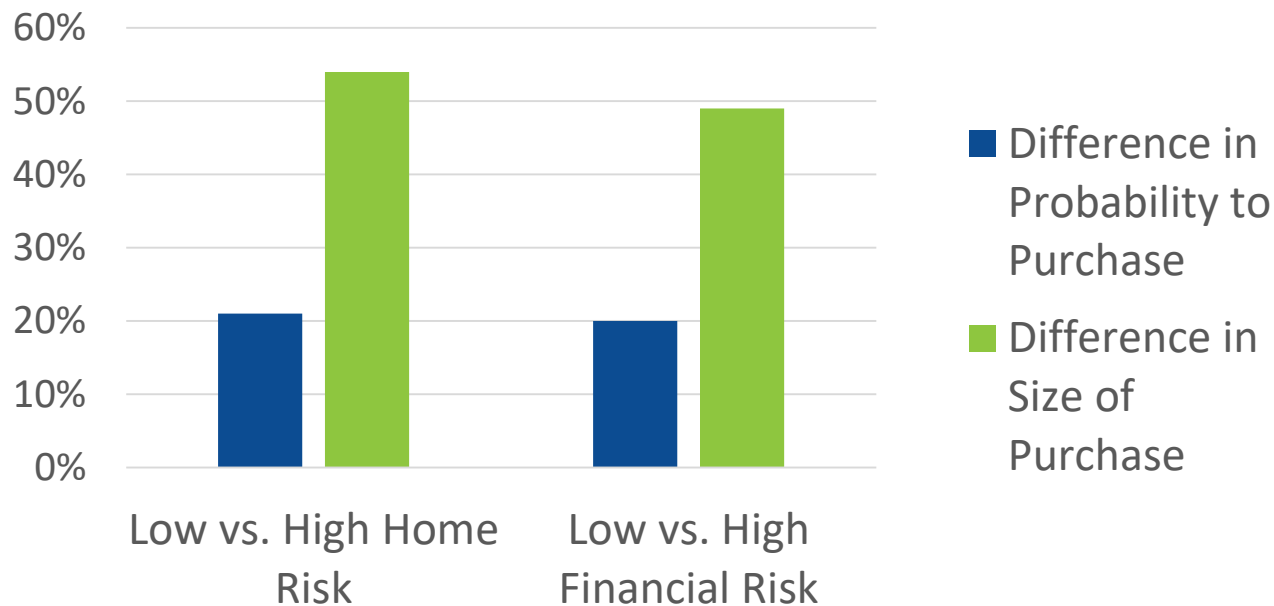
*According to the CDC, social and economic factors drive upwards of 40% of consumer health and behavioral elements account for another 30%.

Consumer Social Determinants and Retail Health

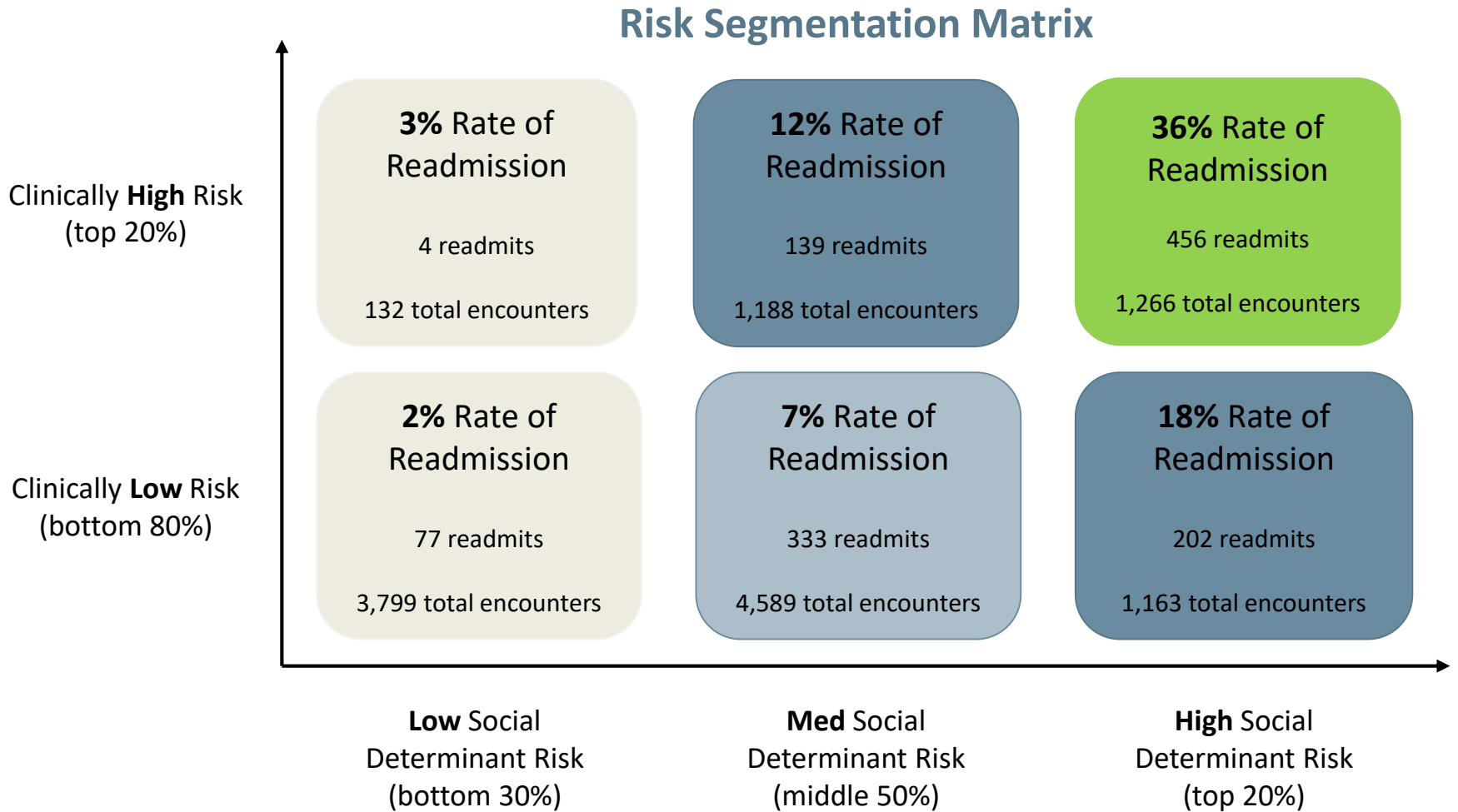
For a retail health network, social determinant information correlated to purchase activity, providing a guide to advertising and offer development

- Able to analyze registries and panels before clients arrive to deliver better experience

Impact of Social Uncertainties and Risk on Retail Health Purchase Patterns



Consumer Social Determinants and Readmissions



Source: 2016 data study with Northeast Provider



Agenda

- Market Feedback
- Data Innovation
- Components of success

- Lots of ways to leverage data
 - Front / Middle / Back
 - Consumer and Payor
 - Financial and Social
- Rapidly changing environment
 - More innovation every day
- Realistically providers need partners
 - Data breadth
 - Modeling capabilities
 - Continuous improvement

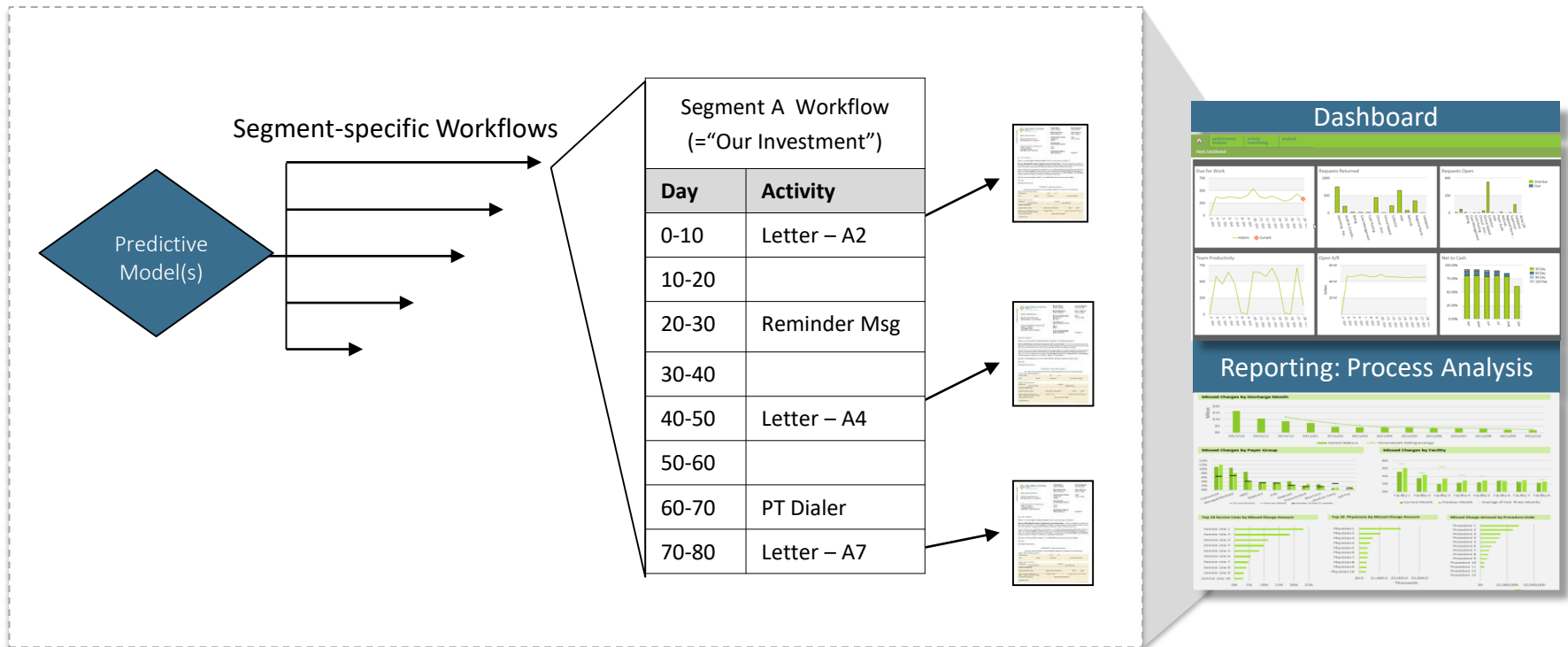
Examples shared

- Propensity to Pay Scores
- Payment Plan Analytics
- Missing Insurance Flags
- Financial Assistance Scores
- Denial Recovery Scores
- Social Determinant Risk Measures

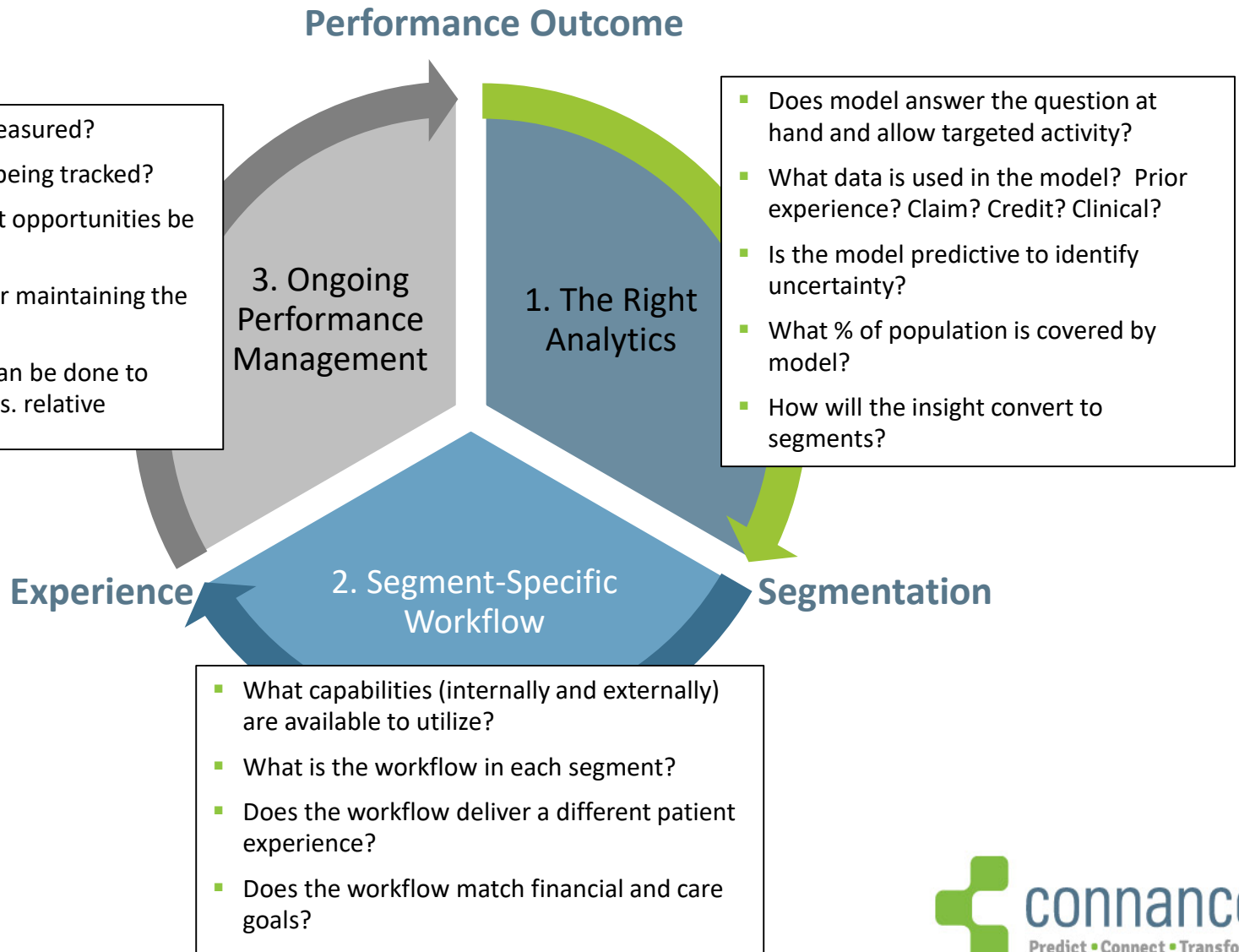
Applying Predictive Technologies

A “score” or “model” only has value when it leads to different workflow

- Segment accounts, patients, claims and such based on expected outcome
- Each segment should deliver a consistent and unique experience
- The experience in the segment should match the business need of the group
- Measurement needs to track both outcome and process



Checklist for Successful Consumer Analytic Applications



Questions



Steve Levin, Chief Executive Officer
Connance
slevin@connance.com
781.577.5000

