



hfma massachusetts - rhode island chapter
healthcare financial management association

Championship Revenue Cycle:

Passion & Purpose



Harnessing Analytical Horsepower: Putting Data to WORK!

Friday, January 19th, 2018
Gillette Stadium Clubhouse

Peter Angerhofer
Principal
Colburn Hill Group

Championship Revenue Cycle:
Passion & Purpose



Agenda

- Introduction
- Analytics Framework
- Current use of Metrics and Analytics
- Advanced Analytics in AR Management
- Conclusion



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Introduction - Peter Angerhofer

2014- Colburn Hill Group

2004-2014 Accretive Health (R1)

2001-2003 Deloitte Consulting

1998-2001 APM/CSC

1991-1996 - U.S. Senate, House of Representatives

MBA, Kellogg School of Management (1998)

BA, Political Science, American University (1991)



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Racing Daily Form DRF.com

Individual Horse Past Performances - Last 12 Starts: Emotional Drive

Emotional Drive		Dr. Mark M. S. (Mar)	Life	Wt	Stk	Wt	Stk	Wt	Stk
Ow: Patenaude Richard	Sire: Blandford (Prod. Berlin)	57 1/10 7 2nd 21 1/2 1/2	2016	4	1	0	0	\$11,395	57
	Dam: Emilia (Crafty Prospector)	47 5/8 4 5 1/2 8 1/2 9 1/2	2015	5	1	0	1	\$17,360	62
	Br: Madara Thoroughbred (Cal)	62 7/8 2 1 1/2 1 1/2 3 1/2							
	Tr: Azarville Duval	52 4/12 7 7th 1/2 2/2 4th							
8Apr16-15A	fst 5f	214 451 57 1.027 4+ @Cim 18000h	51 1/5 5 1 1/2 3 1/2 4th	John K	L1247b	13:30	85-12	Flexible Ethics1249 Bosserette1249 Vocalist1249	Inside duel,weakened
19Mar16-75A	fst 5f	22 46 5841 051 4+ @Cim 12500(125-162)hd	57 1/10 7 2nd 21 1/2 1/2	John K	L1247b	27:30	80-16	Emotional Drive1249 Altara1249 Secret Chorus1284	Re-brid star,weakened
27Feb16-85A	fst 6f	213 440 57 1.10 4+ @3200 20h/1h-N	47 5/8 4 5 1/2 8 1/2 9 1/2	Nicolas G	L120b	27:30	75-13	Alazabridesmit1224 Miss Loujen1249 LetsGoFrick1173	Swk 4nd,weakened
18Jan16-25A	fst 1	223 46 1.1021 202 4+ @3100 40000	37 7/7 17 14 1/2 6th	Steeve C	L120b	8:50	58-24	MySweetAffair1224 MissStarMaker1224 Nazreth1204	4nd into str,bumped
11Dec15-1LR	fst 5f	221 452 571 3+ @5M 2000	62 7/8 2 1 1/2 1 1/2 3 1/2	Perez M A	L1247b	7:30	94-09	Emotional Drive1249 Jazzee1224 Back Street Cat1155	Sped clear,ran 3wide
8Nov15-20nr	fst 5f	221 451 1041 17 3+ @350 M 4 Sp W1 52k	57 7/7 1 1 1/2 1 1/2 3 1/2	Perez M A	L1247b	28:30	- -	West Mid1249 Masonie1224 Emotional Drive1249	Steadied up,held 3rd
15Oct15-85A	fst 5f	221 461 5811 06 3+ @5M 2000	52 4/12 7 7th 1/2 2/2 4th	Perez M A	L1247b	36:00	75-15	My Silver Cat1224 Take It Easyplease1224 Aparri1241	Duited,weakened
Previously trained by Rafael Uri 2015(as of 8/12) (10 0 1 1 000)									
12Aug15-42nr	fst 5f	214 451 5811 04 3+ @5M 2000(26-10)	-0 10/12 5 7th 7 1/2 11 1/2	Iniguez S	L124b	54:90	- -	RushofDy1205 Scitcheffyouc1202 BellBreeze1201	Lugged out,4u into str
27Jan15-25A	fst 6f	214 462 5711 103 3+ @5M 2000	29 8/12 7 5th 6 1/2 7 1/2	Iniguez S	L124b	12:00	69-08	MagicTouch1184 DivineTale1249 CarbonBeach1183	4nd into str,no rally
1Apr14-85A	fst 6f	213 46 58 1.104 3+ @350 M 4 Sp W1 57k	45 6/10 1 7th 2 1/2 4 1/2 5 1/2	Martinez F F	L116b	43:00	74-14	Shkitapobby1189 SwissPriction1161 BritsMilody1170	Lugged out 7u into str
6Mar14-85A	fst 5f	211 440 57 1.021 3+ @350 M 4 Sp W1 56k	26 7/7 2 1 1/2 2 1/2 6 1/2	Martinez F F	L116	28:00	77-13	Copperopolis1249 More Complexity1161 Q' Viva1181	Pulled,bore out turn
21Dec1311E	W P fm 5f @	224 451 5741 10 @350 M 4 Sp W1 46k	5 10/11 2 3 1/2 10 1/2 11 1/2	Arias S	L120	14:40	59-12	AnniversaryKitty1205 CopNWin1205 MorComply1205	Bore out body,weakened

WORKS: Apr15SA 3rd 1:26.1M 2:07 Feb21SA 4th 1:40.1M 25:02 Feb14SA 4th 1:47.1M 2:07 Feb6SA 5th 1:50.1M 25:50 Jan30SA 4th 1:48.1M 26:12



Championship Revenue Cycle:
Passion & Purpose



Purpose of analytics

- To isolate areas of ambiguity
- To separate component parts of a process
- To suggest or identify steps to improve the process or process outcomes

To make a decision



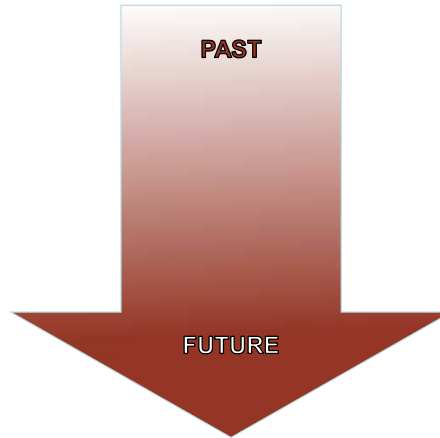


Analytics Framework

Descriptive Analytics

Predictive Analytics

Prescriptive Analytics



Descriptive

- Descriptive analytics describe a sample or population

On average, Americans send and receive twice as many text messages as phone calls (Nielsen Mobile)

Based on past experience, Descriptive Analytics tell the story of what happened



Predictive

- Predictive analytics use past history to draw conclusions about future outcomes

If you typically charge between \$1,000 and \$2,000 per month and there's suddenly a \$4,500 charge, the company may well refuse the transaction. (Motley Fool)

Predictive Analytics don't generally reflect changes in process or behavior



Prescriptive

- Prescriptive Analytics are intended to suggest the best course of action in a given situation

...by taking in seismic data, well log data, production data, and other related data sets to prescribe specific recipes for how and where to drill, complete, and produce wells in order to optimize recovery, minimize cost, and reduce environmental footprint. (Oil and Gas Investor)

Prescriptive Analytics use current information to guide the next actions taken



Decision Making


Descriptive Analytics	<i>Requires interpretation</i>
Predictive Analytics	<i>Based on history, not present</i>
Prescriptive Analytics	<i>Suggests specific action</i>



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Metrics in Horse Racing

Owner

Pedigree

Career Averages

Individual Horse Past Performances - Last 12 Starts: Emotional Drive

Emotional Drive
Ow: Patenaude Richard

Dr. 3	Apr 15	Mar 5	Life	13	2	0	1	\$31,875	62	D.Fat	11	2	0	1	\$30,725	62
Sex:	♂	Age:	3	2016	4	1	0	0	\$11,395	57	Well(304)	0	0	0	\$0	-
Sire:	Emotion (Crafty Prospect)	Dam:	Madira (Crafty Prospect)	2015	5	1	0	1	\$17,360	62	Synth	1	0	0	\$900	36
Tr:	Azarcite Duval										Turf(230)	1	0	0	\$250	5

8Apr16-15A fct Sfl 214 451 57 1.031 4+ @Cim 18000k 51 1/5 5 13 7th 319 4th John K L1241b 13.80 85-12 Flexible Ethics1249 Bosserette1249 Vocalist1249 Inside duel,weakened

19Mar16-75A fct Sfl 22 46 5841.051 4+ @Cim 12500(125-182)nd 57 1/10 7 2nd 21 13 13 John K L1241b 27.30 80-16 Emotional Drive1249 Altara1249 Secret Chorus1249 Re-bid str,led held

27Feb16-85A fct Sfl 6 213 440 57 1.10 4+ @3200 20k %N %N 47 5/8 4 5 1/2 8 1/2 9 1/4 Nicolas G L120b 75-13 Alacridesmi1224 MissLujan1249 LucasFrick1173 Sw 4nd,weakened

18Jan16-25A fct 1 221 46 1.1021.102 4+ @3100 4000s 37 7/7 17 14 13 6th 2149 Bennett C L120b 8.50 58-24 MySweetAffair1224 MissStarMaker1224 Nazreth1204 And into str,umped

11Dec15-18RC fct Sfl 221 451 571 3+ @3100 2000 62 7/8 2 1 1/2 13 13 13 Perez M A L1241b * 70 94-09 EmotionalDrive1249 Jazzee1224 Back StreetCatt1155 Sped clear,ran 3wide

8Nov15-20rr fct Sfl 221 451 1041.17 3+ @3100 4 Sp W152k 57 7/7 1 1 1/2 31 31 31 Perez M A L1241b 28.30 - - West Mid1249 Moonie1229 Emotional Drive1249 Steaded up,held 3rd

15Oct15-85A fct Sfl 221 461 5811.06 3+ @3100 2000 52 4/12 7 7th 13 25 4th Perez M A L124b 36.60 75-15 My Silver Catt1229 Take It Easy1229 Aparri1241 Dueted,weakened

Previously trained by Rafael Uri 2015(as of 8/12) (10 0 1 1 000)

12Aug15-42rr fct Sfl 6 213 451 5811.04 3+ @3100 2000(20-0) -0 10/12 5 7th 713 1024 1133 Iniguez S L124b 54.90 - - Rush/Dy1209 Setchmeffyouc1209 BellBreeze1209 Lugged out,4u into str

27Jan15-25A fct Sfl 214 461 5711.10 3+ @3100 2000 29 8/12 7 5th 64 130 1193 Iniguez S L124b 12.80 69-08 MagicalTouch1184 DivineTale1249 CarbonBeach1183 And into str,no rally

1Apr14-85A fct Sfl 213 46 58 1.104 3+ @3100 4 Sp W157k 45 6/10 1 7th 41 41 57 Martinez F F L176b 43.80 74-14 ShkitaSbitty1189 SwissPriction1161 BritsMilody1170 Lugged out,7u into str


8Mar14-85A fct Sfl 211 440 57 1.021 3+ @3100 4 Sp W154k 26 7/7 1 1 1/2 31 61 614 Martinez F F L116 20.60 77-13 Copperopolis1249 More Complexity1161 Q Vival1181 Pulled,bore out,tum

21Oct13112W fct Sfl 214 451 5741.10 @3100 4 Sp W148k 5 10/11 2 31 10 10 1174 Arias S L120 14.40 59-12 AnnivrsyKitty1209 CorsNW1209 MorComply1209 Bore out,body,ezed

WORKS: Apr15A 31 fct 261 M 200 Feb21SA 4 fct 48P M 2512 Feb14SA 4 fct 471 M 270 Feb6SA 51 fct 100P M 2598 Jun20SA 4 fct 481 M 26127


Medication

Race Details



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Common Metrics

- Pre-Registration Rate
- Service Authorization Rate
- Conversion Rate for Uninsured
- POS Cash Collection
- Net Days in A/R
- % AR Aged 90 days and greater
- DNFB
- Bad Debt Write Off %
- Cash Collection
- Case Mix Index
- Write Off

POP QUIZ!!!

Are these metrics...

- Descriptive?
- Predictive?
- Prescriptive?



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Challenges

- Mostly Descriptive
 - Leading indicators, but historically facing
- Significant lag to recognize changes
 - Writeoffs may be years later
- May be contradictory or misleading
 - DNFB reduction could increase % of AR >90 days



Predictive Analytics

- Denials Management
 - Which Denials are worth working?
- If regression is based on past experience, may not have full context
 - Auth denials are written off if no # available in billing system
 - Auth numbers may be in CM or PB system

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Things about your AR...

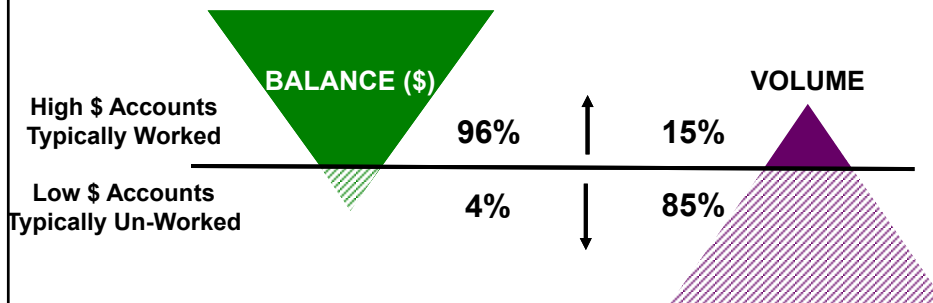


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You aren't working most of your AR



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40% of your AR has no cash value

- Posting Errors such as missed contractuals
- Claims that have passed filing or appeal limits
- Denials like bundled charges which will not be paid



Your next claim is a coin flip



Missed Contractual?
Or Authorization Denial?
Or Late Charge?
Or Registration Error?
Or...

Staff have to make a decision on how to approach follow up



Most of your staff time spent working claims is wasted

Type of Account	Time Allocation	Action	Research
		40.0%	60.0%
Non-Collectable	40%	16.0%	24.0%
Simple Claims	25%	10.0%	15.0%
Complex Claims	35%	14.0%	21.0%

No Value	76.0%
Low Value	10.0%
High Value	14.0%



Decisions require information

- Confirm balance and Payer
- Review history and read comments
- Review charges and any previous adjustments or payments
- Review EOBs

Descriptive

“The last claim with these characteristics got paid when I...”

Predictive



AR Management Summary

- Mostly Descriptive Analysis
- Staff required to do lots of research
- Staff time can get focused on no- or low-value claims
- Staff required to interpret information and make decisions on next steps



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Can you win on horses?



Favorites only win
33% of the time



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2 Goals of Analytics

- Avoid the Coin flip
 - Present claims that need follow up
- Make decisions about next steps
 - What is wrong with the claim
 - What to do about it





How Staff Evaluate Claims

- Aged Trial Balance or Workqueues
- Claim Editor Reports
- Transactions (Charges, Corrections, Payments, Writeoffs, Adjustments, Contractuals)
- 835/837
- Notes/Comments



Staff Thinking

EXAMPLE

Current balance of \$50 is in Third Party FSC

AND

835 indicates a patient balance of \$50

AND

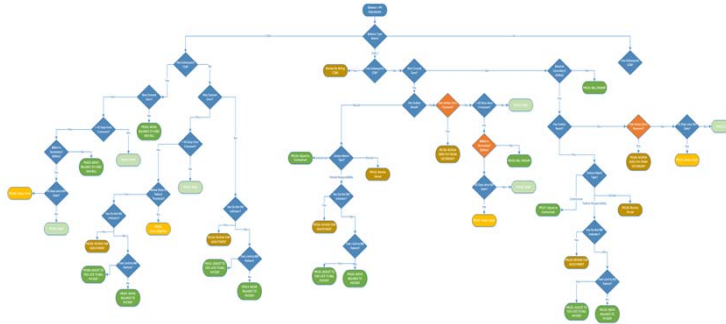
No Patient Payment on Account

Correlate what is known about a claim to draw conclusions about defects and next steps

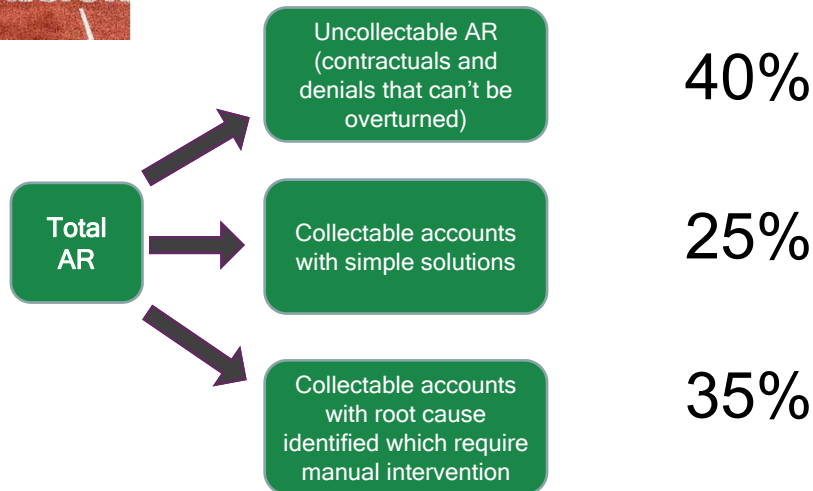


Systematize Staff Decisions

Evaluate each account for: collectability, root cause defect, timing of next follow up, next required action

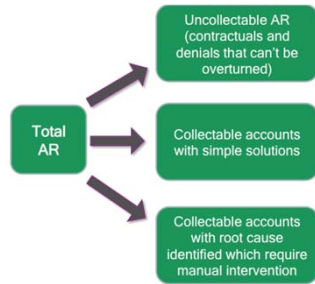


Root Cause Analysis





Root Cause Analysis

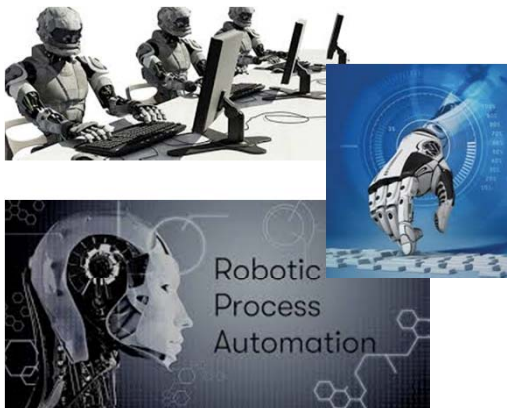


- No Coin flip
- No Human Error
- Detailed insight on every claim

Allows for systemic decision making – managerial choices about how to work each claim category



Turn decisions into action through RPA

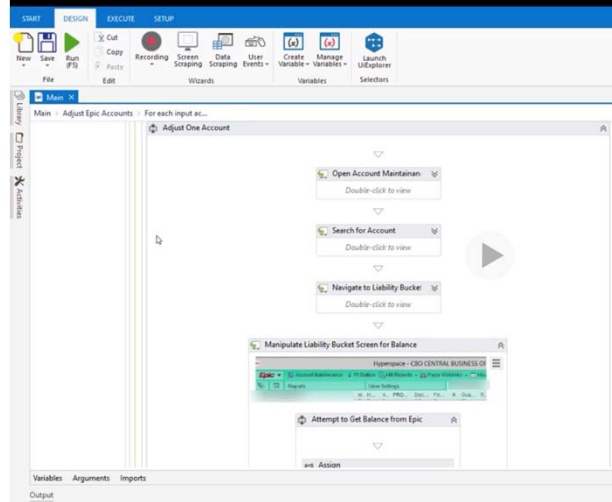


Software that is “trained” to replicate the actions of a human user

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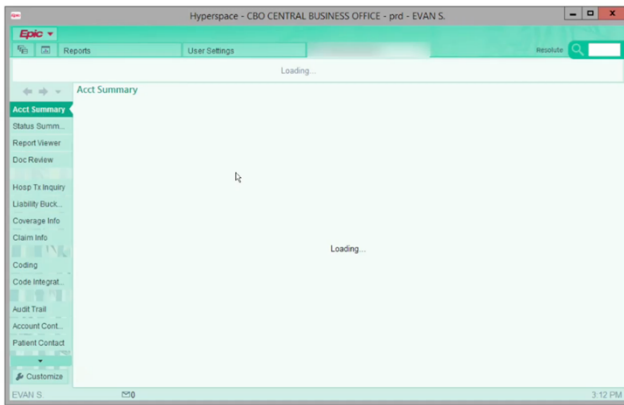


RPA Application

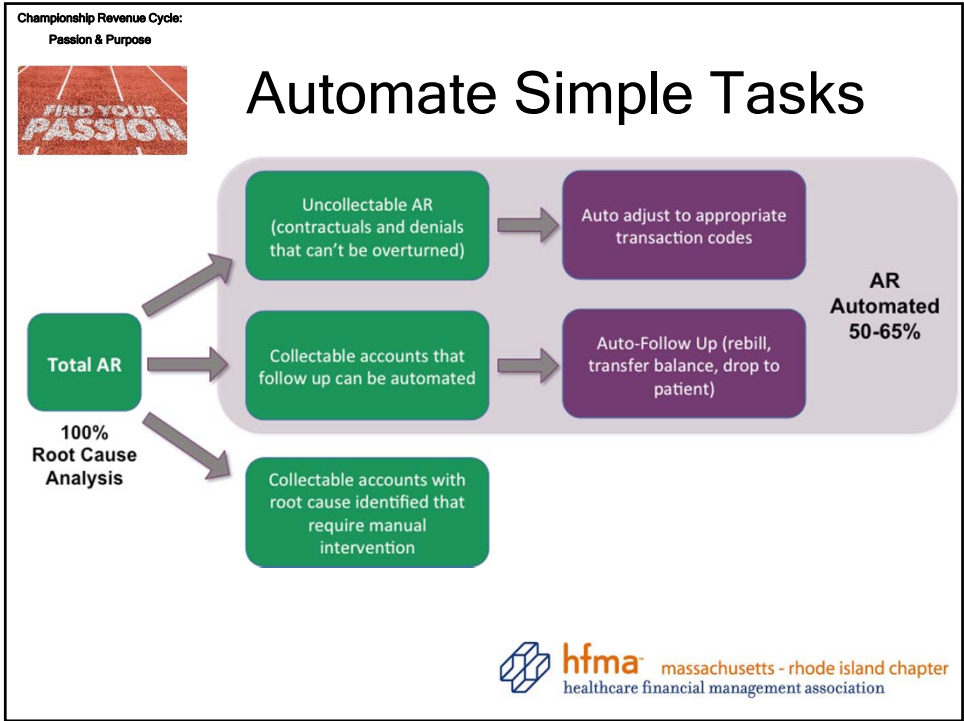


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Manual Intervention

Distribute and sequence to users for efficient follow up with prescribed next action

- 25% identify next step
- Minimize research
 - Intelligent Sequencing of claims

10% Unknown



Post Analytics Follow Up

Type of Action	Type of Account	Volume	Time Allocation	Time	
				Action	Research
				0.0%	0.0%
Automated	Non-Collectable	40%		0.0%	0.0%
Automated	Simple Claims	25%		0.0%	0.0%
				80.00%	20.00%
Manual	Analytic Suggestions	25%	71%	57.1%	14.3%
				40.0%	60.0%
Manual	Complex Claims	10%	29%	11.4%	17.1%

No Value	31.4%
High Value	68.6%



Outcomes

- Staff time moved from non-value add activities to value add activities
- 65% of AR resolved through automation
- 25% of AR expedited through follow up insight
- 400% productivity improvement

Incremental Collections, Accelerated Collections, and Reduced AR



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Conclusions

- Traditional reliance on Descriptive has been demanding for staff
- Healthcare should shift from Descriptive to Prescriptive Analytics
- Better analytics enables use of automation
- Providing better insight leads to more efficient AR management and therefore lower AR, incremental cash, etc.



Questions?

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