Converting

Into Value

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Disclosure Statement

- Data used during this presentation is from
  Mayo Clinic Health System
  Health Tradition Health Plan
- Neither MCHS, nor HTHP endorse any of the sponsors of this meeting
- As a senior executive of both organizations, I had no COI issues when I utilized this data
- Tools used in this discussion are currently products owned by Optum; a conference sponsor

Alice's Paradox

"If you don't know where you are going any road will get you there!"

- Lewis Carroll, *Through the Looking Glass*

Corollary for Healthcare:

To know how to improve we must measure it!

The Value of Big Data From Large Collaborative Databases

- **Enables**
  - Views of your performance compared to similar organizations
  - Accurate risk adjusting models;
    Ends the “our patients are sicker” response
  - Fair normalization of local charge variations
    Ends the “but we charge more” response
  - Use of predictive modeling tools
- **Empowers organization-wide transition from a FFS to a Population Health Mgmt mindset**

Phases of Transition

Global Risk / Population Health Mgmt

FFS / Point of Care

PHASE IV

- Strong utilization management
- Greater accountability for outcomes
- Industry Leadership

PHASE III

- UM/CM protocols
- Simple Performance Models
- Beginning to realize cost savings

PHASE II

- Improved data collection & reporting
- Simple non-productivity based metrics

PHASE I

- Episode Based Care (non-metric driven)
- Integrated use of Electronic Records

Four Key Issues for Success

1. Accuracy and Availability of Data
2. Readiness for Organization-wide Change
3. Alignment of Provider Incentives
4. Acceptance of Transitional Realities (Financial and Performance)

Basic Big Data Sources

- **Clinical Data (from Electronic Medical Records)**
- **Claims Data (from Providers or Health Plans)**

Humedica MinedShare® (clinical data)

- MCHS implemented this analytical tool Oct 2012
- Adoption goals focused on:
  1. **Transition** to a Population Health strategy
  2. **Education**
     - Weekly region-specific training sessions to analyze and discuss data trends
  3. **Governance**
     - Formal request/review process that asks:
       "What data do you really need to SEE?"
       "How are you going to USE this data?"

What is WHIO? (claims data)

- WHIO is the Wisconsin all payer database
- Incorporated in late 2005
- Organization of Organizations
  - Providers
  - Payers
  - Purchasers
  - State of Wisconsin
- WHIO uses Ingenix as its vended datamart
- Ingenix uses symmetry's ETG grouper as it base

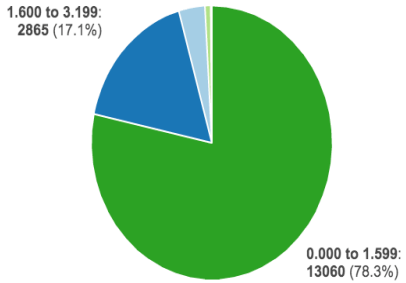
Clinical Data

Adding the Clinical Dimension

- Patients missing BMI screening → Patients w/ BMI > 35
- DM patients missing A1c test → DM patients w/ A1c > 9
  - DM patients in control on A1c, LDL and BP
- Coded HF patients → Patients w/ EF < 40 but no HF code
  - HF patients not on ACE/ARB
  - HF patients at-risk for IP stay

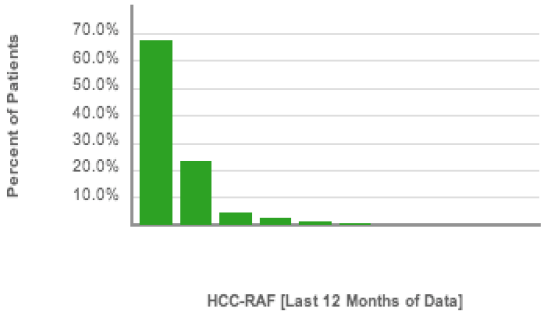
High Risk Stratification / Predictive Modeling

CHF: Coded CHF Panel by HCC Score



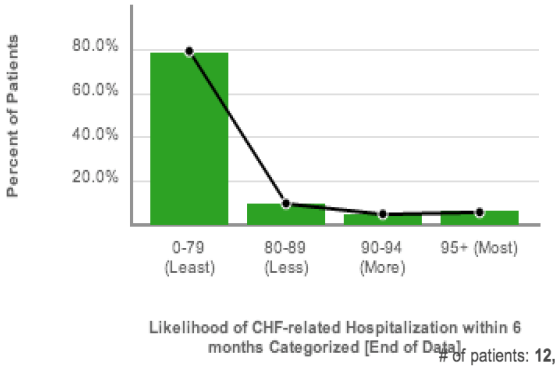
# of patients: **16,664**

CHF: Pts Not Seen in Last 6 Month by HCC Risk Score



# of patients: **5,532**

CHF: Pts by Likelihood of CHF-related Hospitilization w/

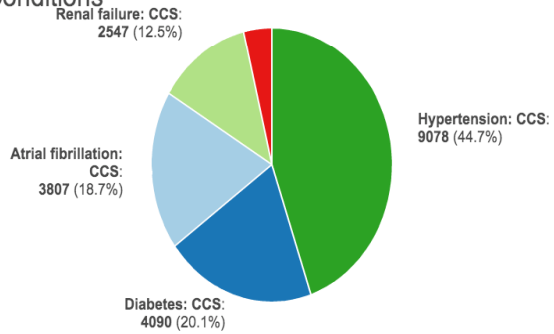


# of patients: **12,113**

x

Show Data Actions

CHF: Pts by CHF-Related Conditions

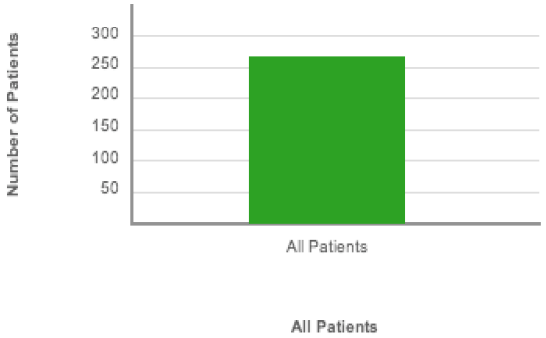


# of patients: **9,923**

x

Show Data Actions

CHF: Pts w/ DM and A1c > 8

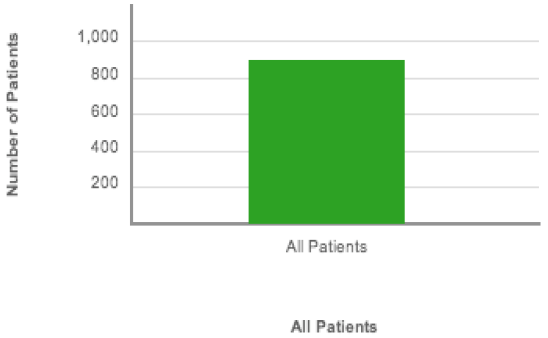


# of patients: **267**

x

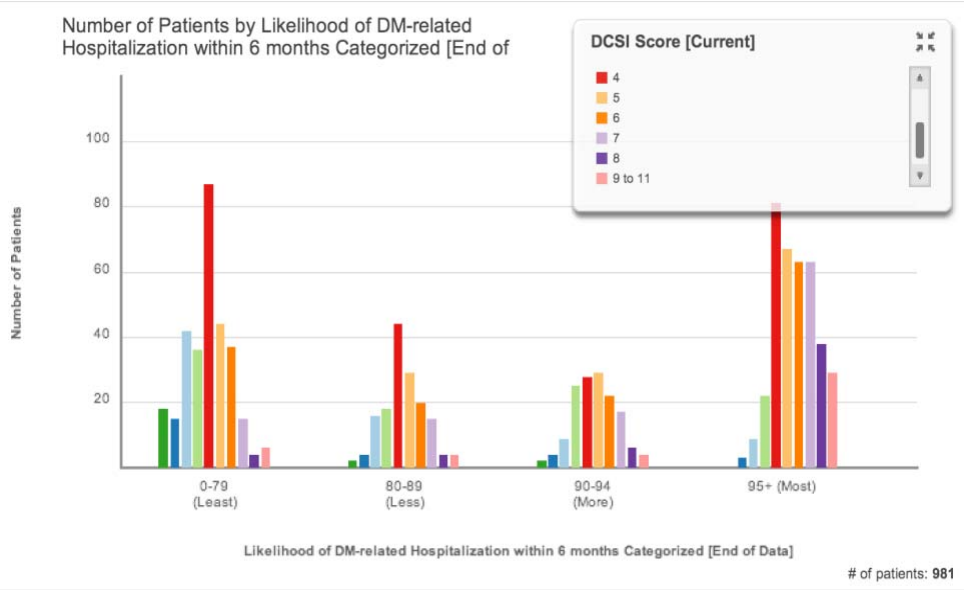
Show Data Actions

CHF: Pts with BMI > 35 and Amb Rx for



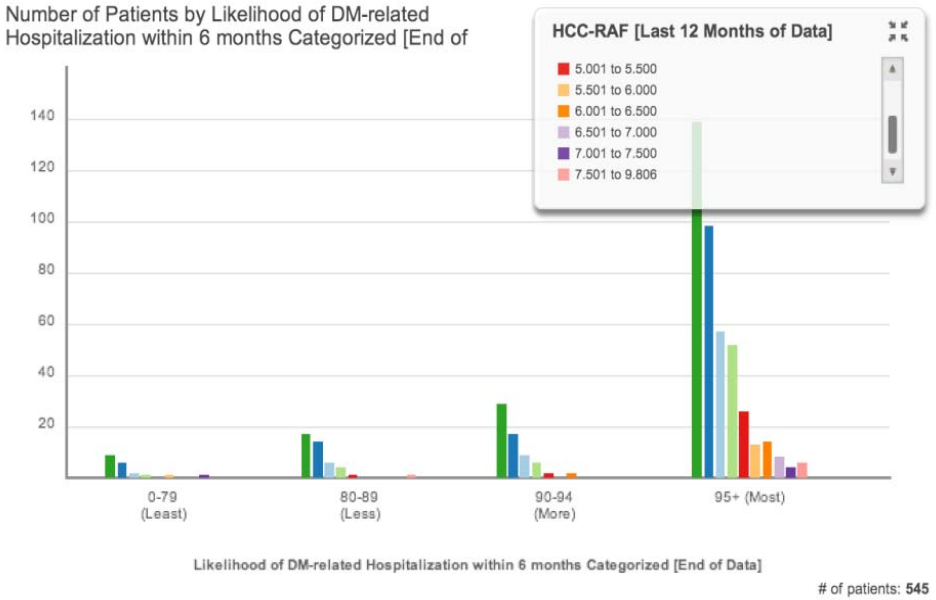
# of patients: **899**

High Risk Multi-layered Stratification Model

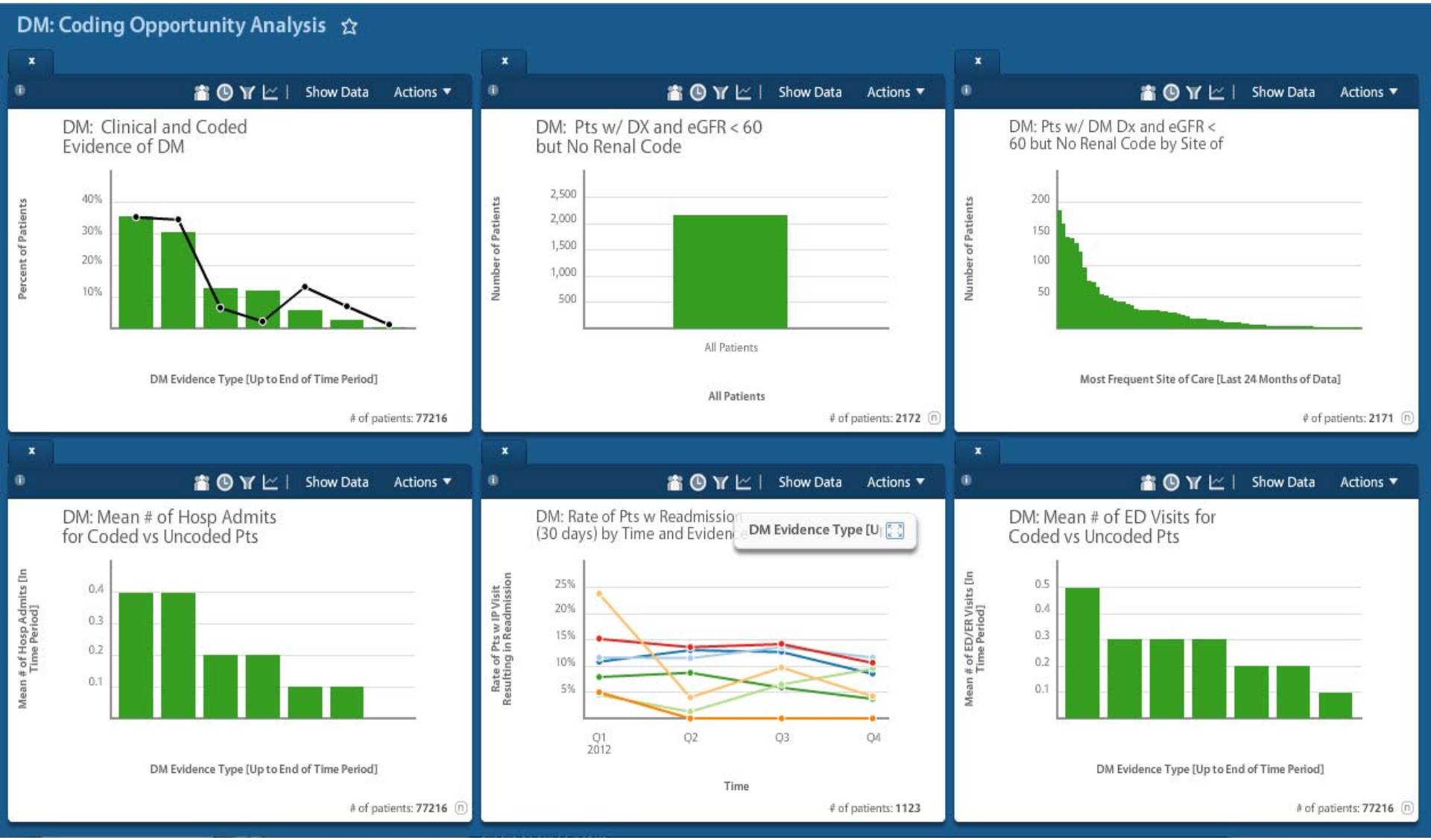


This report stratifies the diabetic population using the predictive model placing them into 4 buckets, where 95+ are the most likely to be admitted within the next 6 months. These buckets are further stratified by the DCSI Score (Diabetes Complication Score Index)

This report stratifies the CHF population using the predictive model placing them into 4 buckets, where 95+ are the most likely to be admitted within the next 6 months. These buckets are further stratified by the HCC Score. This report is qualified to show only patients with an HCC score > 3.



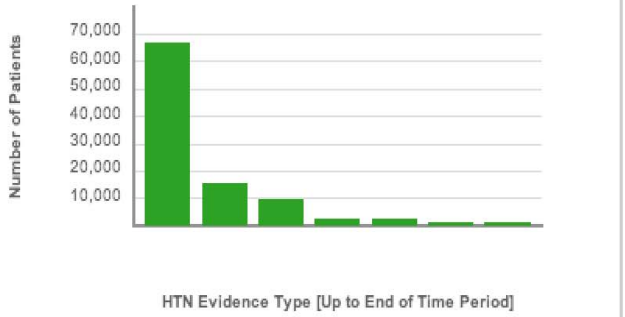
Coding Opportunity Analysis



Provider Scorecard - Hypertension

Show Data Actions

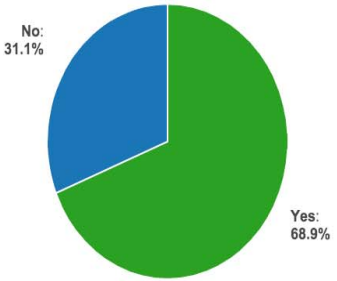
HTN: Pts by Evidence Type



# of patients: **100,277**

Show Data Actions

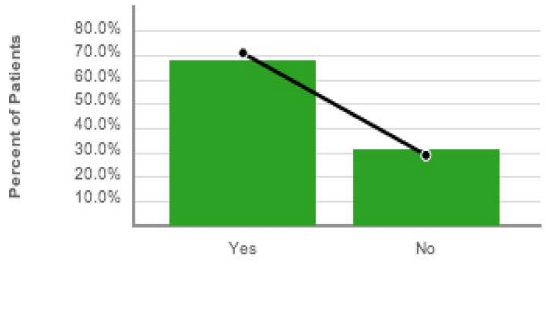
HTN: % of Pts w/ SBP/DBP Reading Last 12 Months



# of patients: **92,927**

Show Data Actions

HTN: % of Panel w/ Most Recent BP < 140/90

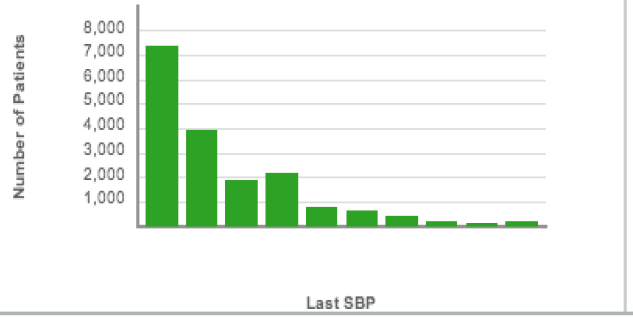


# of patients: **64,037**

x

Show Data Actions

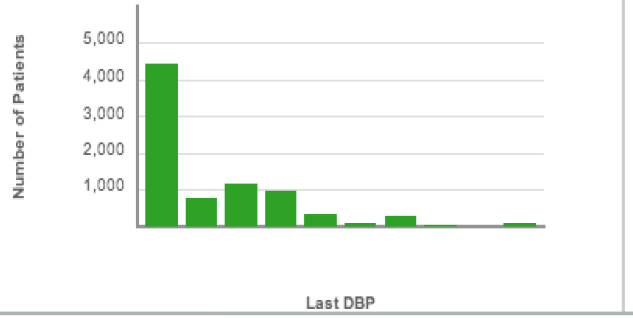
HTN: Pts w/ SBP >= 140 by Last SBP



x

Show Data Actions

HTN: Pts w/ DBP >= 90 by Last DBP



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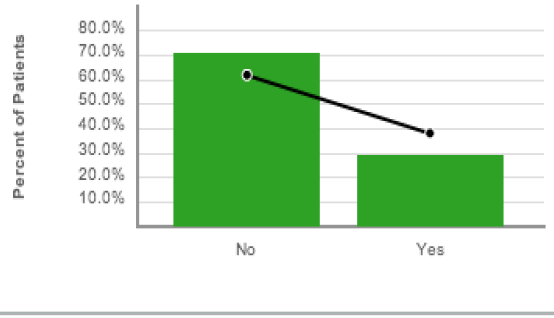
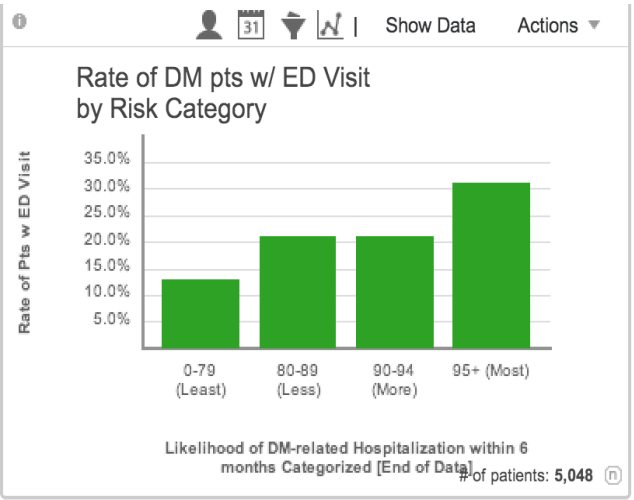
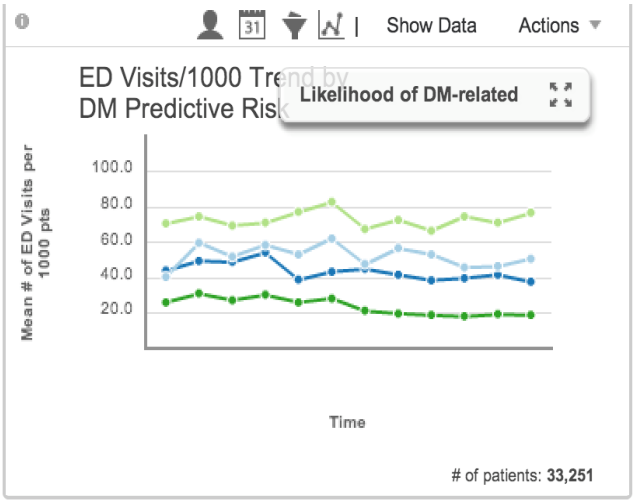
Show Data Actions

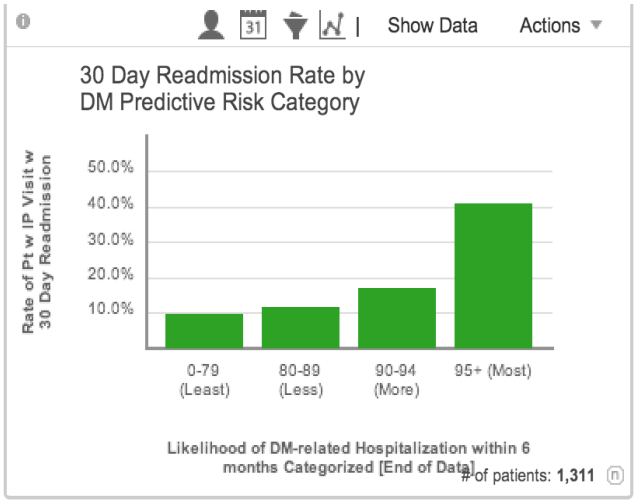
HTN: Out of Control Pts with Dx of DM



Utilization Review Model - Diabetes







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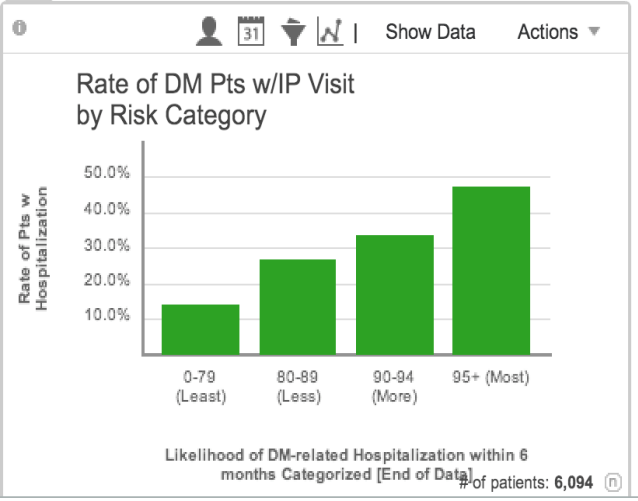

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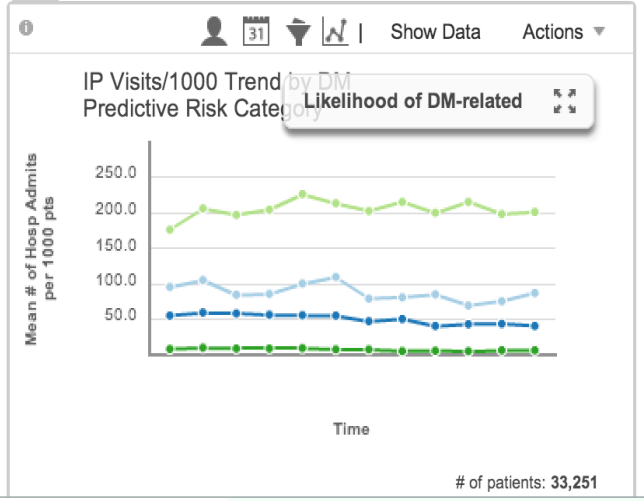

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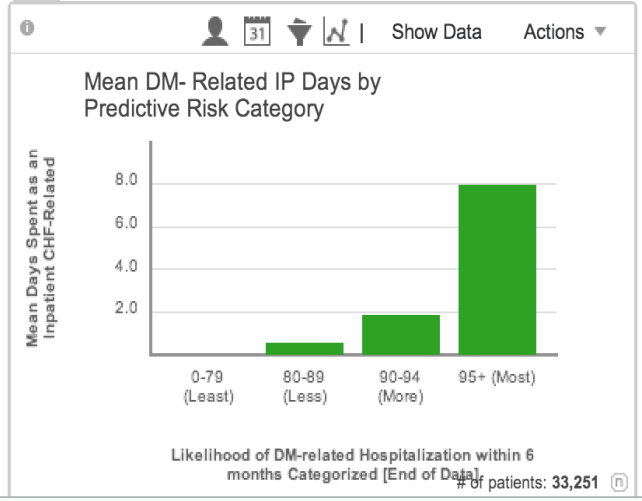
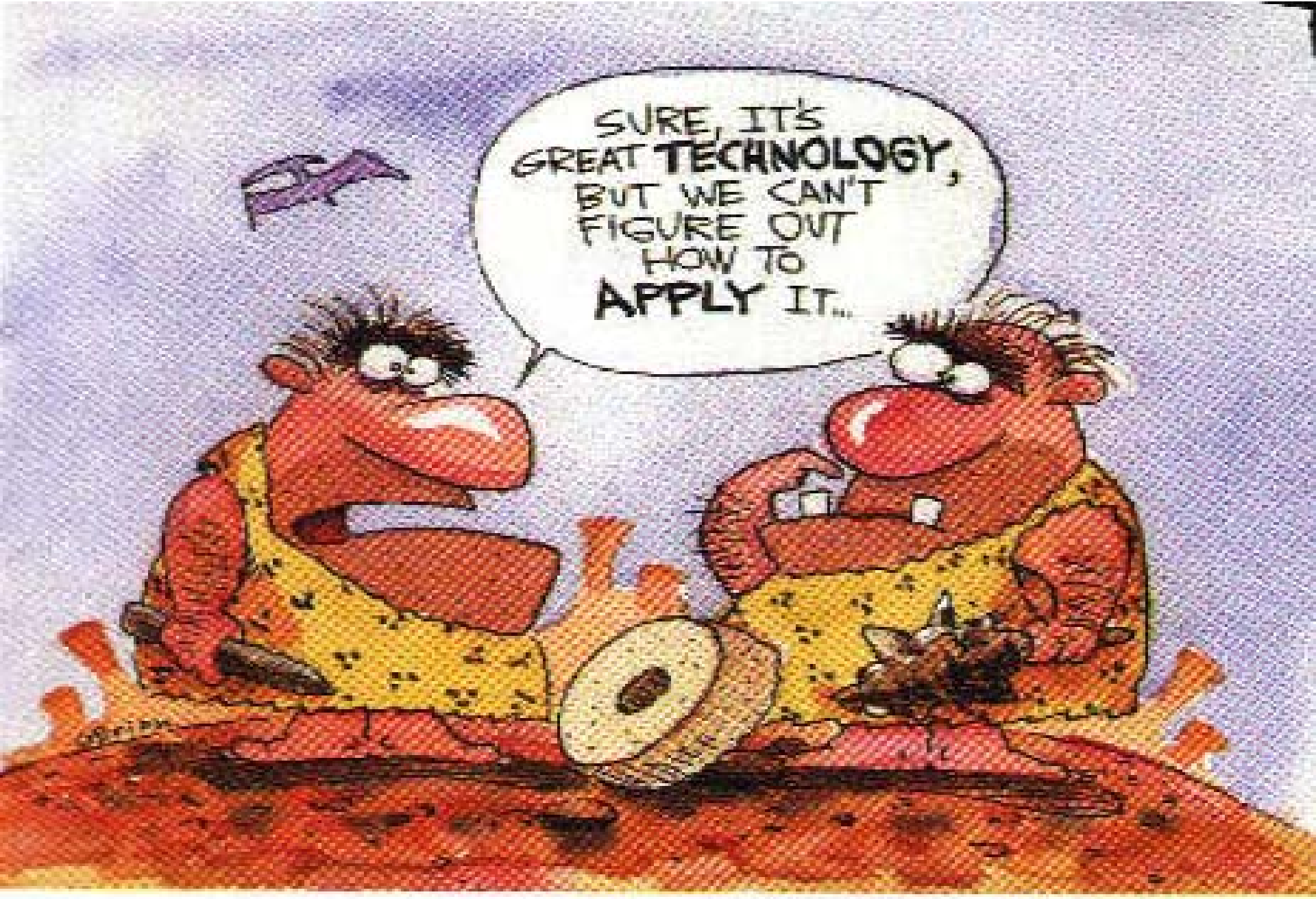
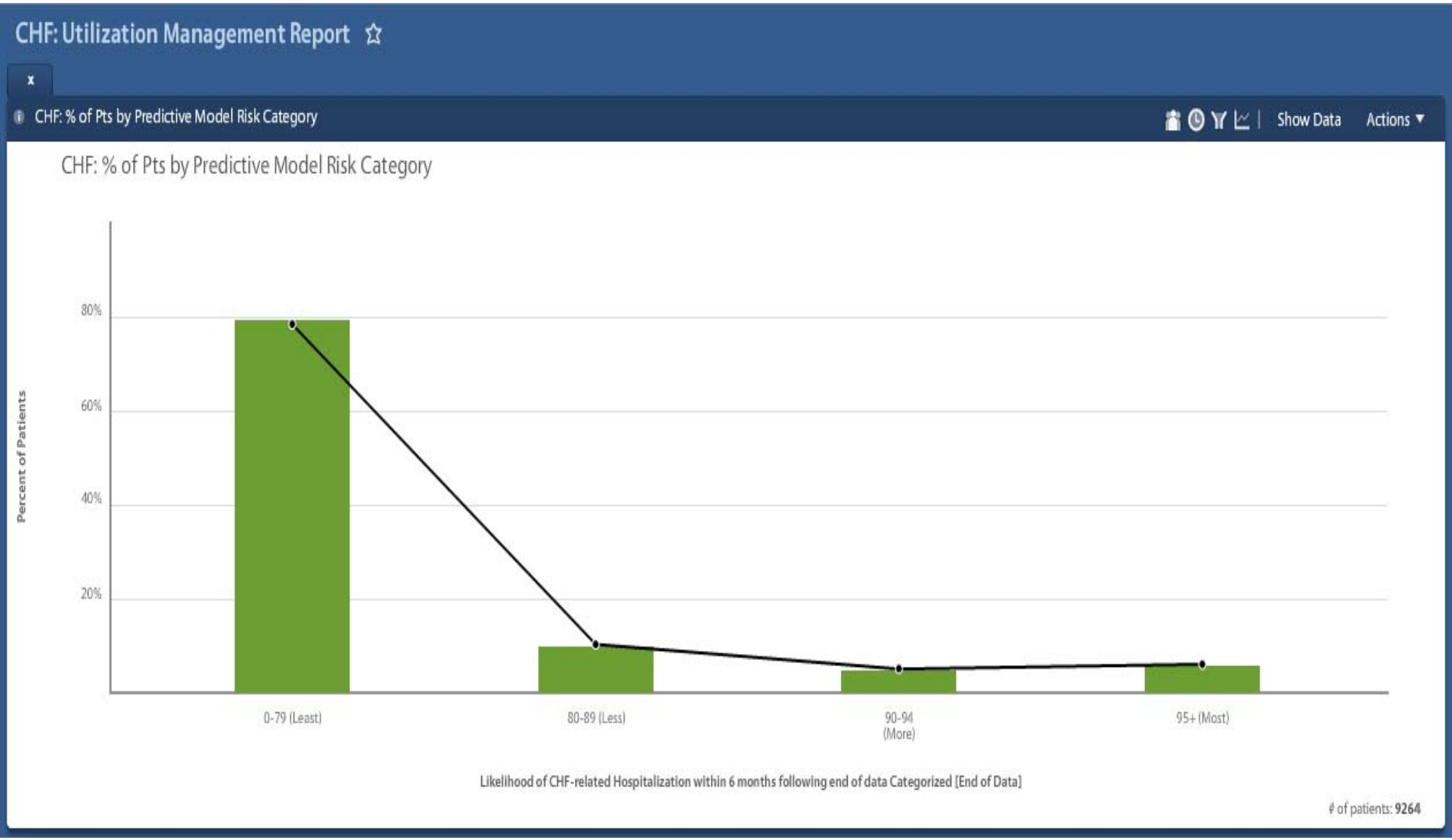




Making it Work for You

- Focus, Focus, Focus
- Obtain provider buy-in on data validity
- Start with one or two small focused projects
- Go for quick wins
- Avoid trying to do too much right away

CHF Predictive Model Categories



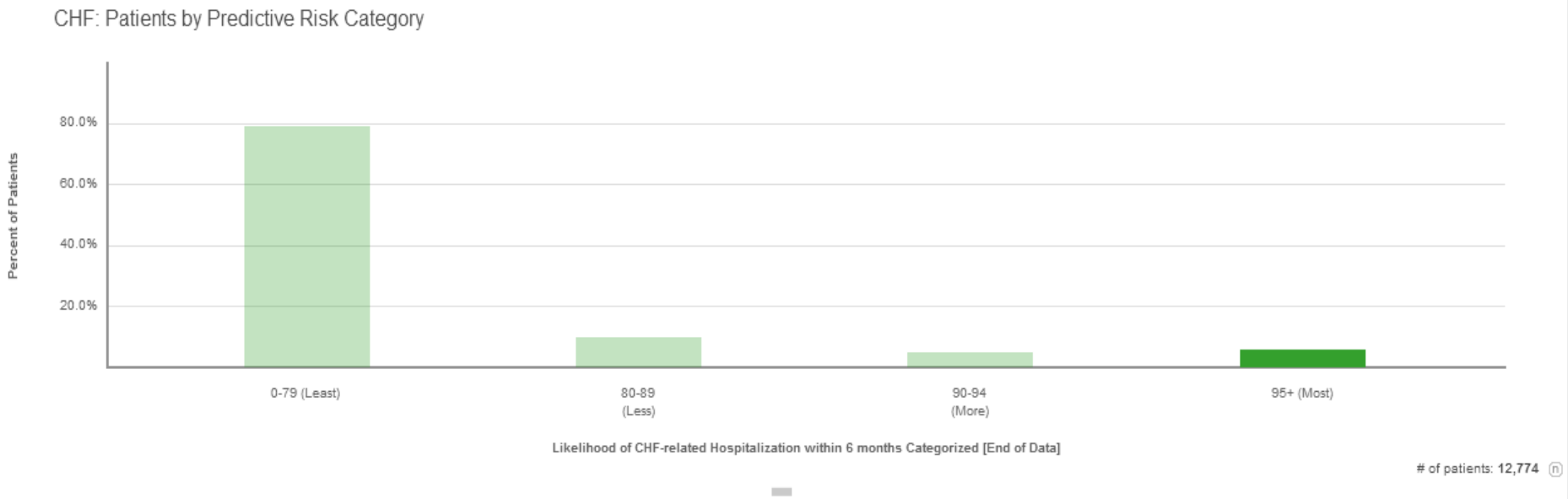
CHF Predictive Risk

CHF Predictive Risk Overview ★

X

CHF: Pts by Predictive Risk Category

Hide Data Actions

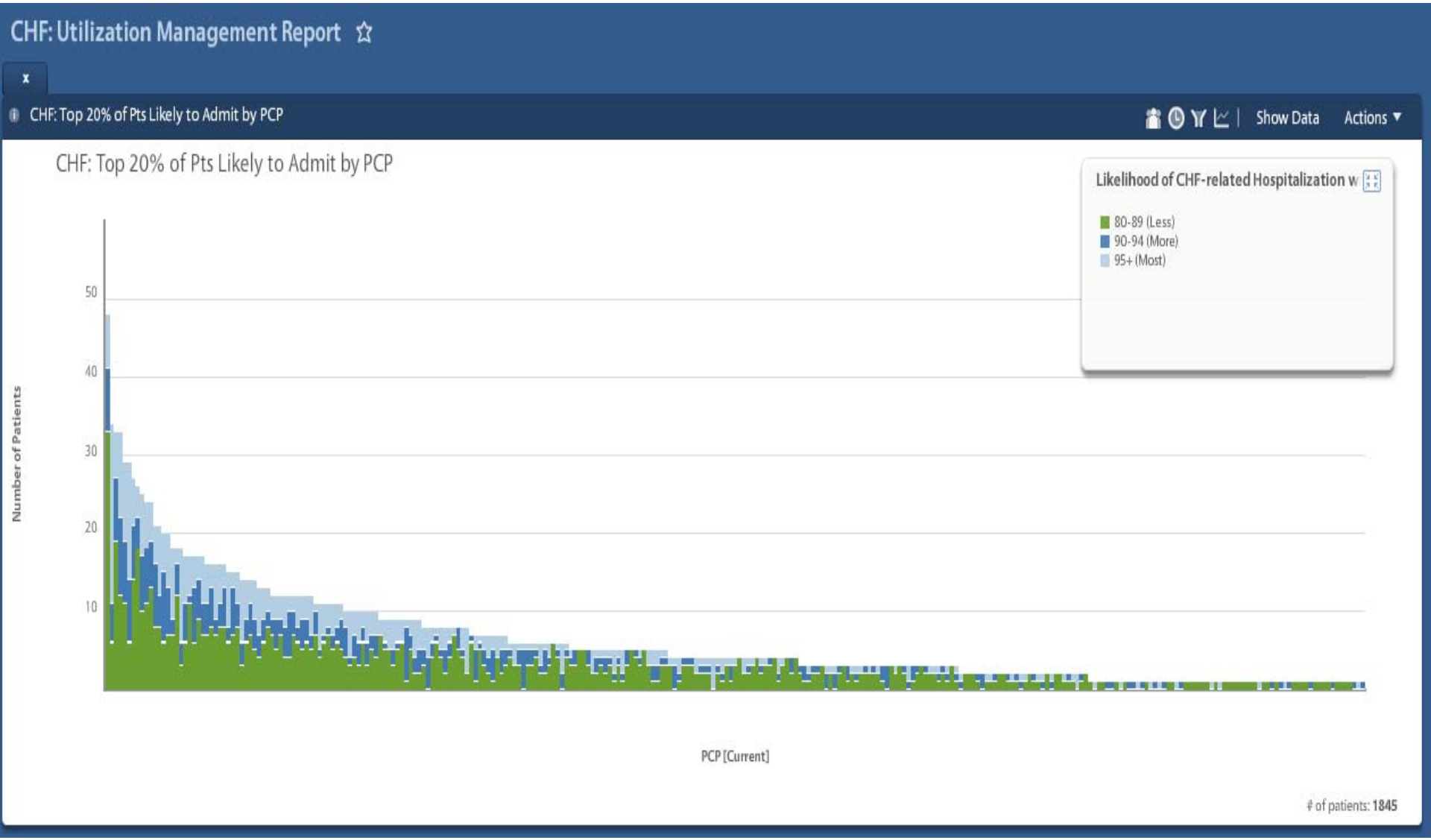


# of patients: 12,774

Data | Patient List | Graph Notes

Likelihood of CHF-related Hospitalization within 6 months Categorized [End of Data]	Percent	Num.	Denom.
0-79 (Least)	79.1	10,106	12,774
80-89 (Less)	10.0	1,276	12,774
90-94 (More)	5.0	635	12,774
95+ (Most)	5.9	757	12,774

High Risk CHF Panels by PCP

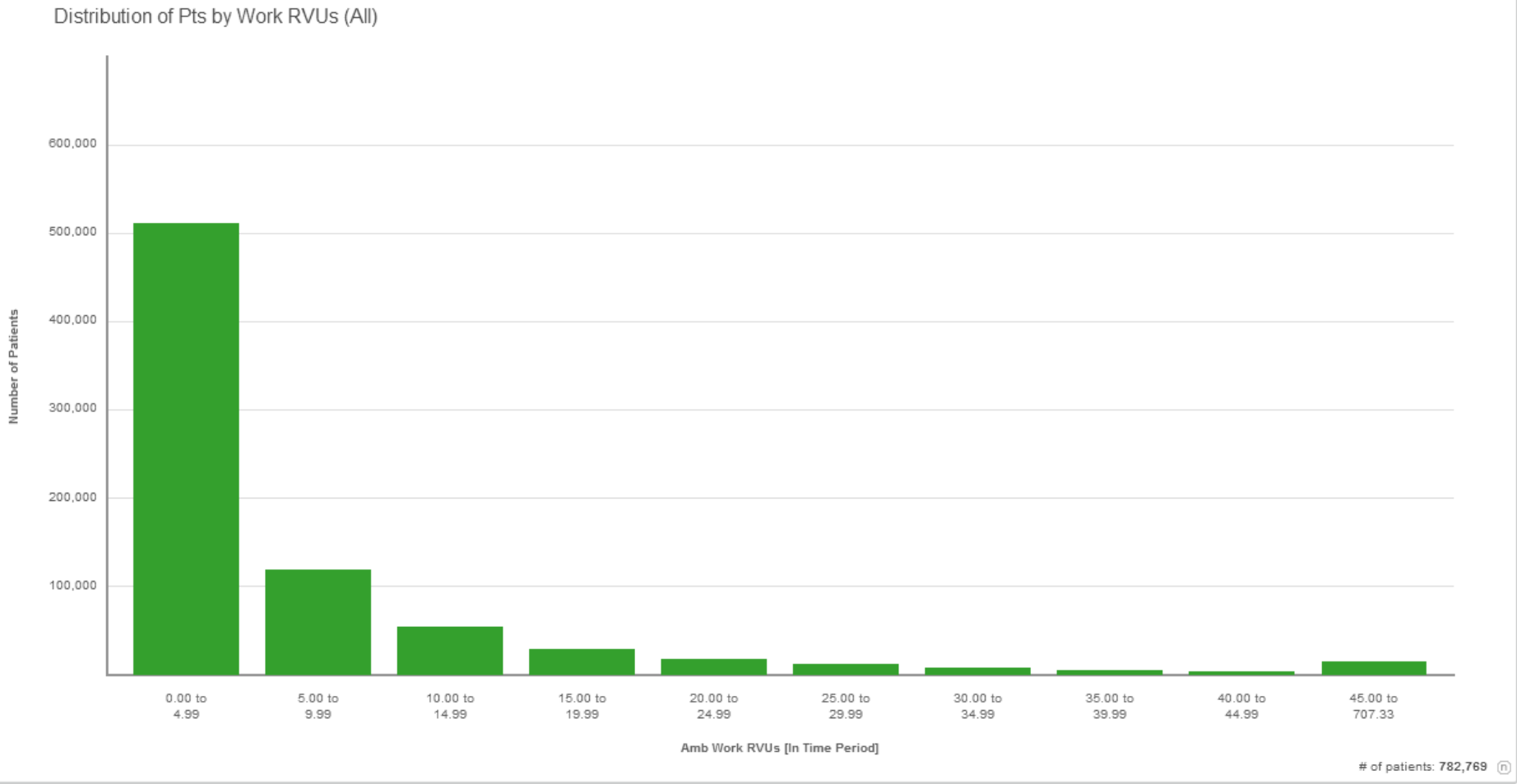


Population Cost vs Severity (by RVU)

Pop Mgmt Dashboard: Cost and Severity ★

x

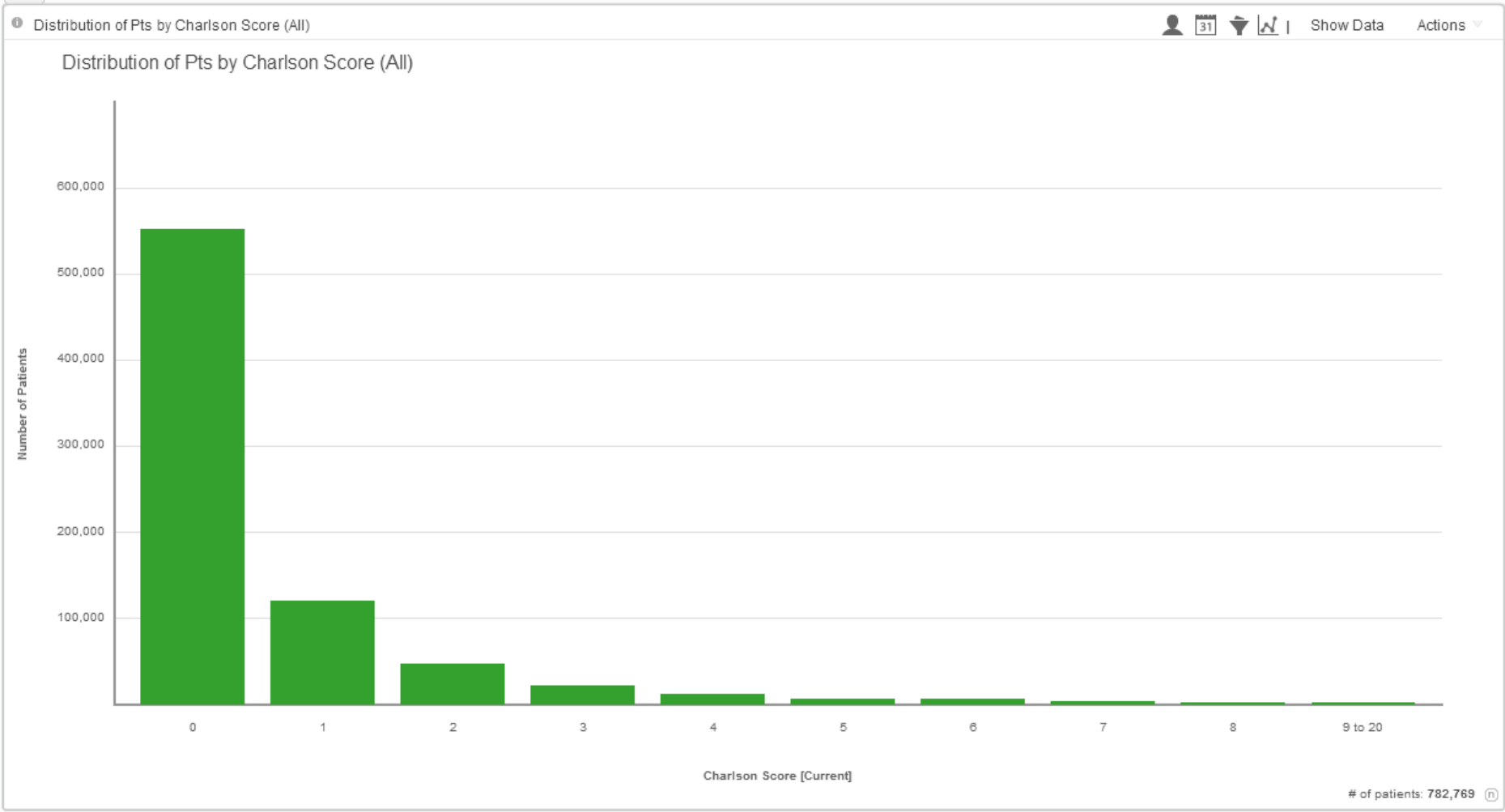
Distribution of Pts by Work RVUs (All) | Show Data | Actions



Population Cost vs Severity (by Charleston Score)

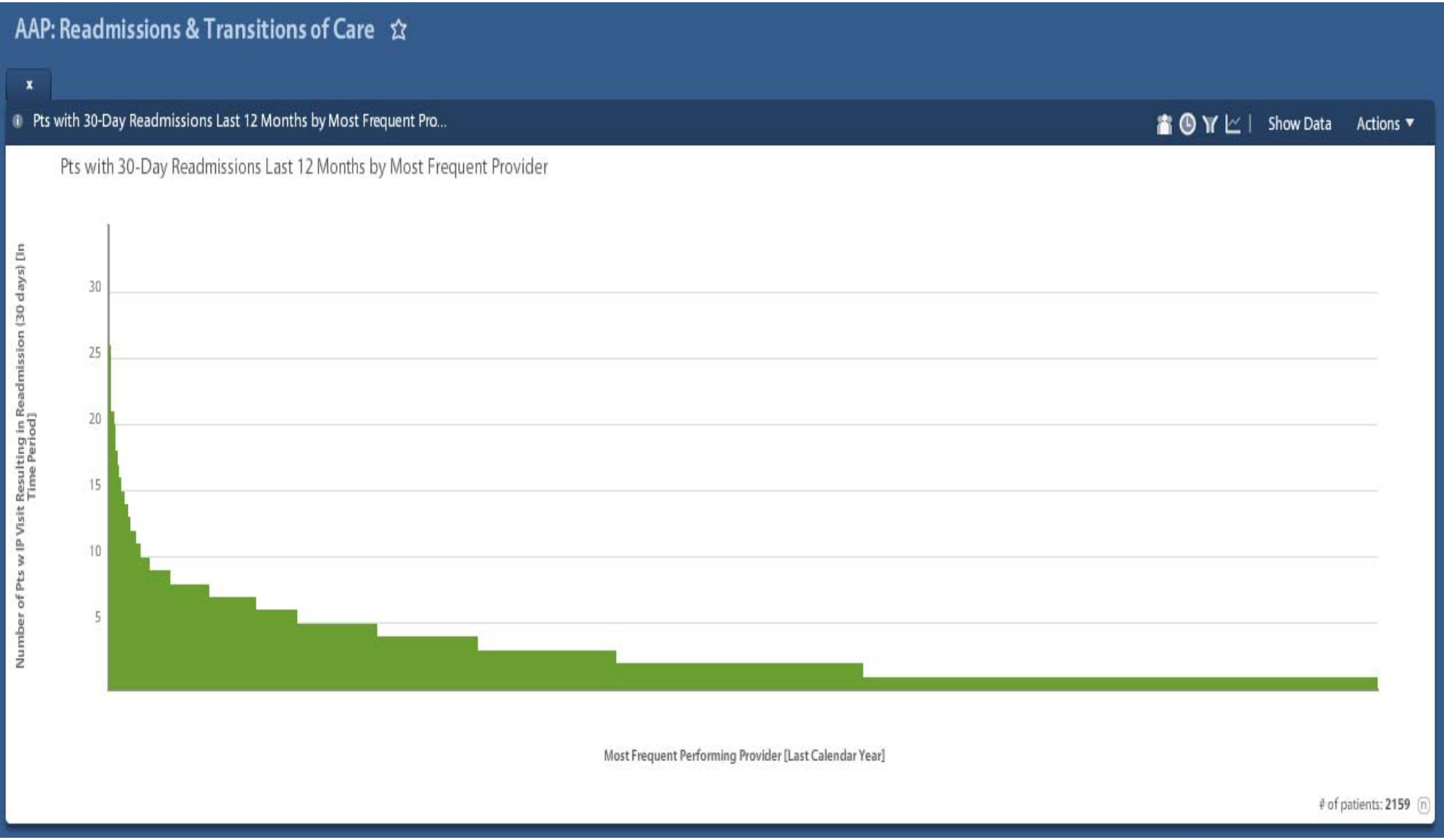
Pop Mgmt Dashboard: Cost and Severity ★

x

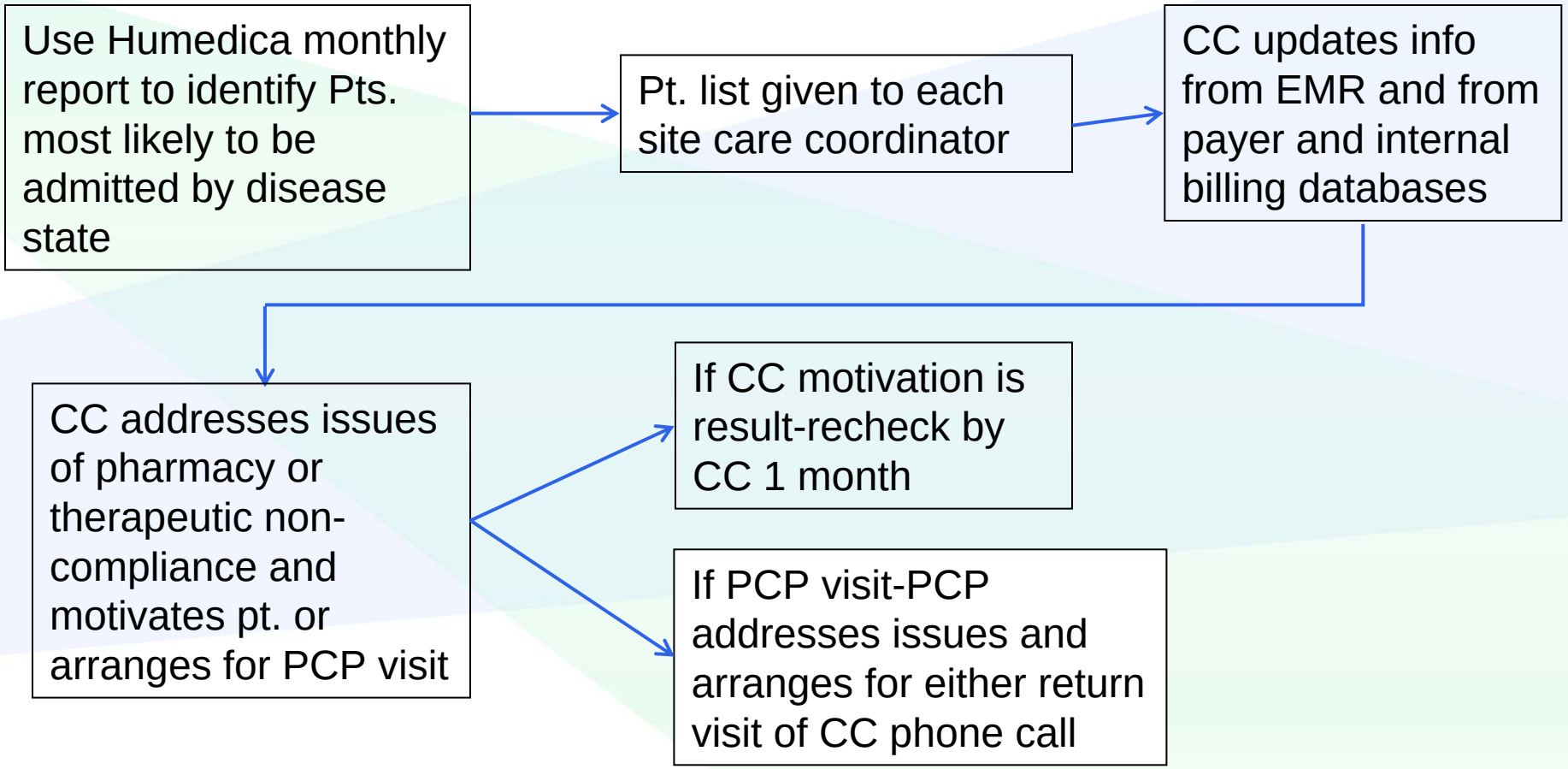


Managing High Utilizers

30-Day Readmissions by Provider



Idealized High Risk Patient Management Flow



Claims Data

Making it work for you

- Educate providers on
  - Value of Severity Adjusted Data
  - Value of Cost Normalized Data
- Show providers a true picture of their care
- Indentify “benchmark” providers
- Generate a willingness to embrace the data to enable improved personal practice patterns

Severity Adjusted Peer Comparisons

Wisconsin HEALTH INFORMATION Organization

Affiliation Group Profile Presented by WHIO	Specialty Patterns of Care	For the 12 Months Ending 3/31/2012

Affiliation Group

Affiliation ID:

Affiliation Description:

Number of Providers:	11
Number of Episodes:	4,833
Case Mix Episodes:	0.99

Peer Group

Peer Group Number of Episodes:	1,203,930
Peer Group Name:	WHIO PCP (Family)

Key Statistics

Overall Quality Index:	1.04
Overall Cost Index, Episode:	1.00

Confidence Intervals for the Index

Overall Quality Index:	1.04 to 1.05 **
Overall Cost Index, Episode:	0.97 to 1.03

Statistical significance of difference between index and peer group average: * p<0.10; ** p < 0.05

Episode Case Mix Summary

Top 10 ETGs, by Total Cost (Completed Episodes of Care)

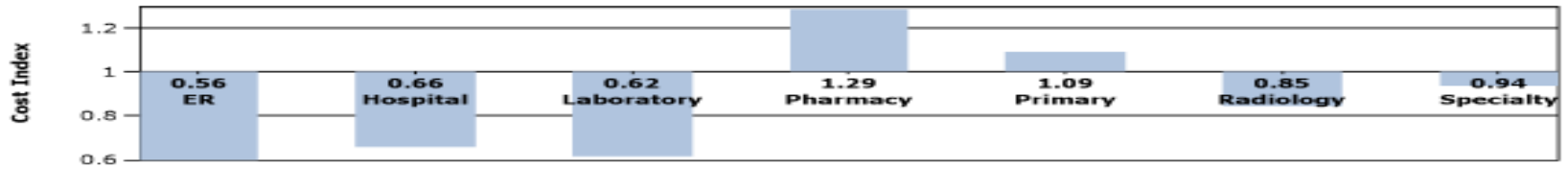
ETG Family Description	Episodes			Encounters (Per 1000 Episodes)	
	Episodes	Actual Cost / Episode	Peers Cost / Episode	Actual Encounters / 1000 Episodes	Peers Encounters / 1000 Episodes
Diabetes	224	$1,920.02	$1,705.21	20,163	18,103
Hypertension	470	$607.35	$671.70	10,407	11,165
Pregnancy, with delivery	28	$8,844.03	$8,836.30	15,575	21,802
Mood disorder, depressed	206	$936.63	$830.17	11,051	10,956
Hyperlipidemia, other	360	$482.44	$418.69	5,409	5,356
Asthma	126	$1,122.93	$924.80	10,812	9,025
Ischemic heart disease	41	$1,954.75	$1,972.12	16,395	14,934
Migraine headache	73	$1,036.41	$681.65	9,772	7,074
Uncomplicated neonatal management	31	$2,286.07	$2,140.08	4,097	4,016
Anxiety disorder or phobias	112	$583.66	$444.83	8,477	7,431
All Others	3,163	$387.51	$433.52	4,364	4,516
All Episodes	**4,833**	**$618.21**	**$620.78**	**6,556**	**6,537**

Specialty Patterns of Care

Specialty Patterns of Care
Reporting Period : 4/1/2010 - 3/31/2012

Affiliation Group ID: M1528731020535
Affiliation Group Name: MAYO CLINIC HEALTH SYSTEM - FRANCISCAN HEALTHCARE - ONALASKA

Cost Index Summary, by Service Category



Cost and Utilization Summary Measures

	Profiled Costs					
	Actual Encounters	Peers Encounters	Actual Cost / Episode	Peers Cost / Episode	Cost / Episode Index	Actual Total Cost
ER	104	205	$7.48	$13.26	0.56	$36,139
Hospital Services	537	1,531	$75.29	$114.62	0.66	$363,871
Laboratory	1,250	1,727	$18.91	$30.71	0.62	$91,373
Pharmacy	16,080	15,779	$247.45	$191.93	1.29	$1,195,943
Primary Care Core	8,070	6,841	$133.99	$122.51	1.09	$647,595
Radiology	498	526	$31.07	$36.69	0.85	$150,142
Specialty Care	5,147	4,986	$104.03	$111.05	0.94	$502,788
Total	31,685	31,595	$618.21	$620.78	1.00	$2,987,850

Overall Cost Index: 1.00

Utilization Rates Per 1,000 Episodes

	Actual	Peers	Index
Specialist Visit Rate	1,249	1,150	1.09
Other Specialty Care Rate	196	210	0.93
Radiology Procedure Rate	141	141	1.00
MRI Procedure Rate	8	6	1.29
Laboratory Procedure Rate	614	630	0.97
Overall Prescribing Rate	3,327	3,265	1.02
Generic Prescribing %	92%	90%	1.02
ER Visit Rate	24	49	0.49
Admits per 1000 Episodes	16	18	0.88
Days per 1000 Episodes	32	57	0.57
Average Length of Stay	2.03	3.12	0.65

Cost Summary Breakdown by Site

Site	ER	Hosp Svc	Lab	Pharmacy	PCP	Radiology	Specialty	Overall Cost	Overall Quality
A	0.80	0.86	0.72	1.00	1.04	0.98	0.91	0.97	1.05
B	0.47	0.60	0.66	1.12	1.09	0.92	1.02	1.00	1.07
C	1.21	1.50	0.90	1.18	0.95	1.18	1.54	1.20	1.00
D	0.73	1.00	0.81	0.92	0.99	0.92	1.07	0.98	0.98
E	0.51	0.70	0.83	0.82	1.37	0.73	0.86	1.00	1.03
F	0.53	1.31	0.58	0.98	1.07	0.93	1.14	1.04	1.01
G	0.84	0.92	0.82	0.75	0.90	1.37	1.34	1.05	0.96
Competitor								0.98	1.07

services driven

encounter driven

both

p<0.05

Rad-MRI driven

Observe site to site variation!

Cost Breakdown by Site								Overall		
Clinic A Providers	ER	Hosp Svc	Lab	Pharmacy	PCP	Radiology	Specialty	Cost	Quality	Case Mix
A	0.67	1.1	0.75	0.98	1.07	1.04	1.78	1.21	0.99	1.05
B	0.83	0.82	0.75	0.83	0.96	0.45	0.8	0.81	1.04	1.16
C	1.22	1.74	0.83	1.54	0.97	1.08	1.83	1.33	0.97	1.09
D	0.48	0.72	0.68	0.92	1.09	1.38	1.17	1.08	1	1.07

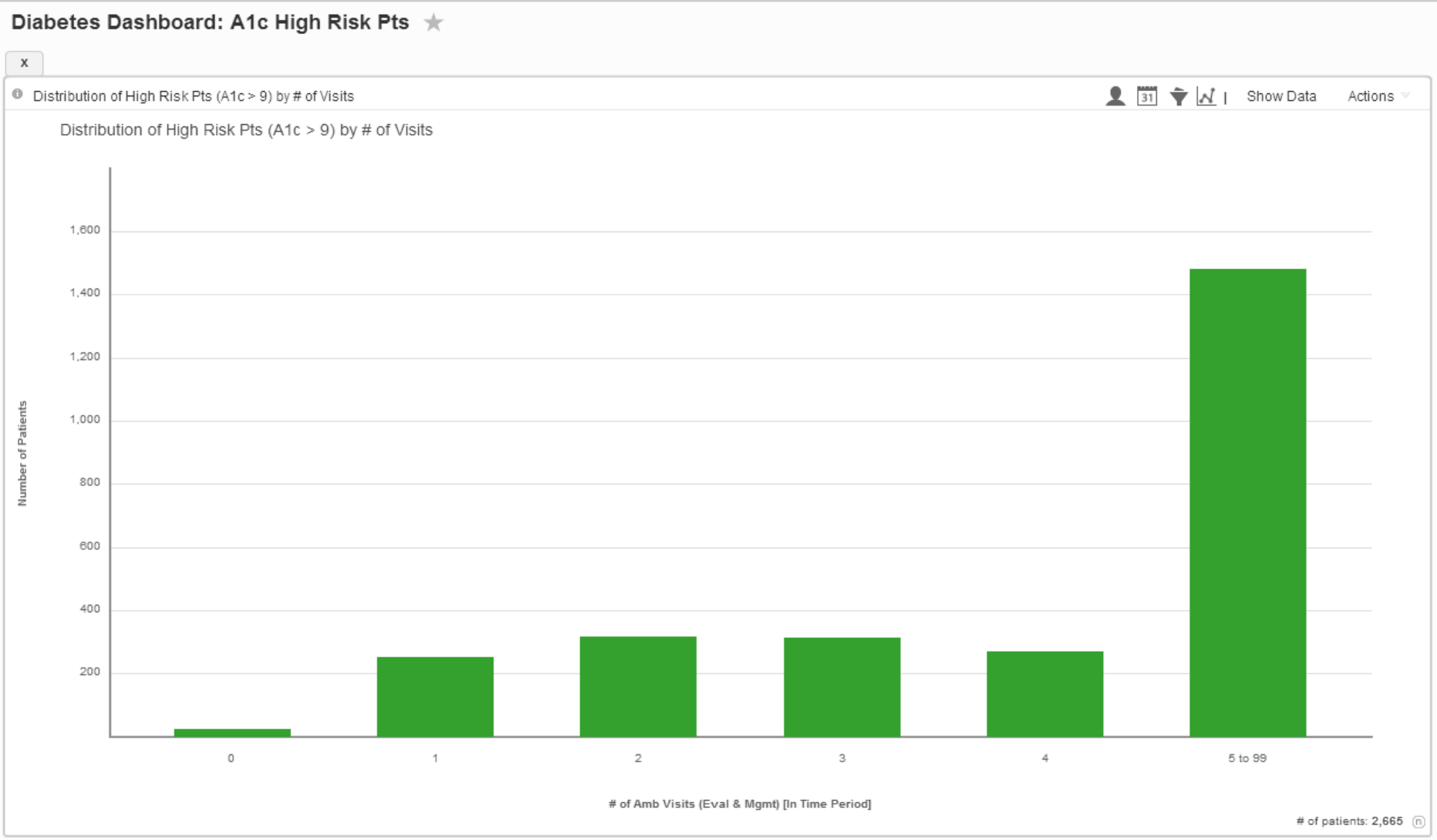
Services driven

Encounter driven

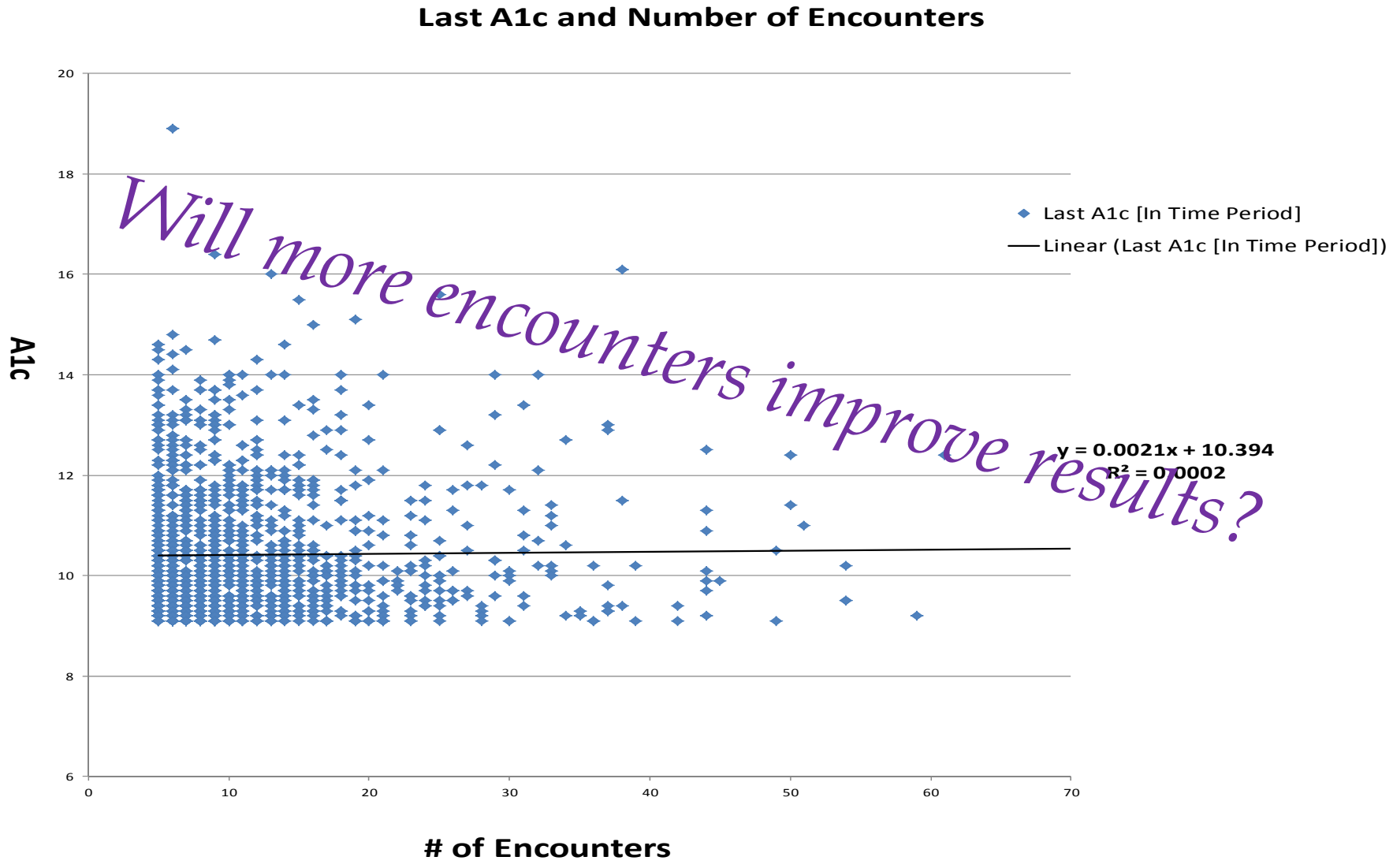
Both

Here's your benchmark!
(Lowest cost and highest quality)

Will more visits improve the outcome?



In God we Trust; all others bring data!



Key Takeaways

- Learn your data before using it
  - Examine: Find the trends in your population
  - Diagnose: Focus on the actionable opportunities
  - Treat: Design evidence-based interventions
- ***Choose opportunities that are sized to current resources***
- Balance centralized standards with customized applications
- Design initiatives with measurement in mind

Key Takeaways

- Governance is critical
- Maintain control of data requests
- Require use plan before data mining
- ***Ensure end user understanding of data prior to release***
- Validate that data provided is being used to improve processes and …
- Measure outcomes! Did results improve?

Questions?