HUMEDICA

Anceta

Using Clinical Analytics to Optimize Care Coordination Across Multiple Sites of Care

Community Health Network

MAYO CLINIC HEALTH SYSTEM

WILMINGTON HEALTH

Goal

Delivering *actionable* data in *ways* that are useful to care teams on the front lines, helping to drive quality and performance improvement

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Outline

- Importance of clinical analytics and comparative data
- Framework for acting on clinical analytics
- How organizations are optimizing care coordination with clinical analytics
  - Community Health Network
  - Mayo Clinic Health System
  - Wilmington Health
- Key Takeaways

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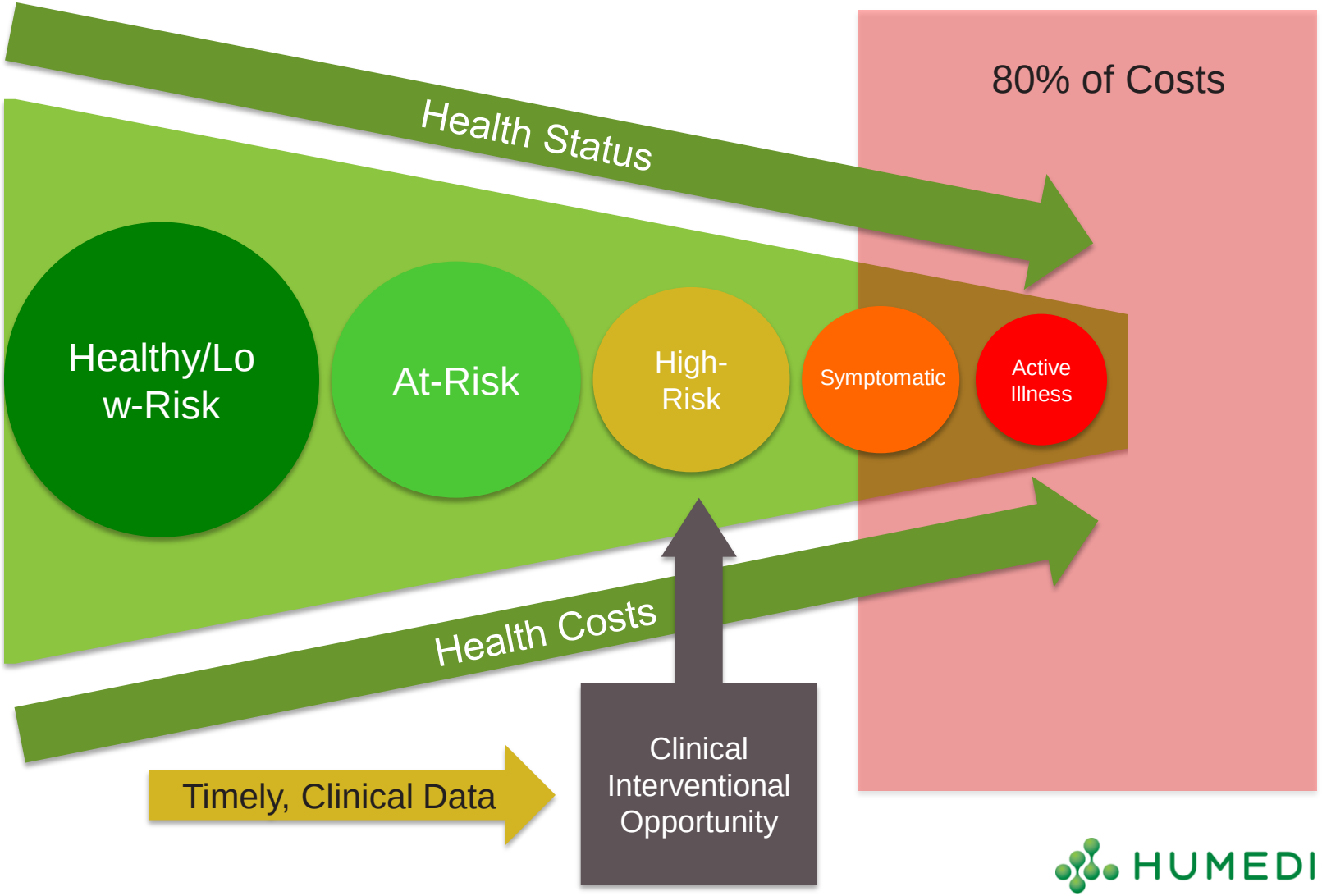
Clinical Data Are Essential



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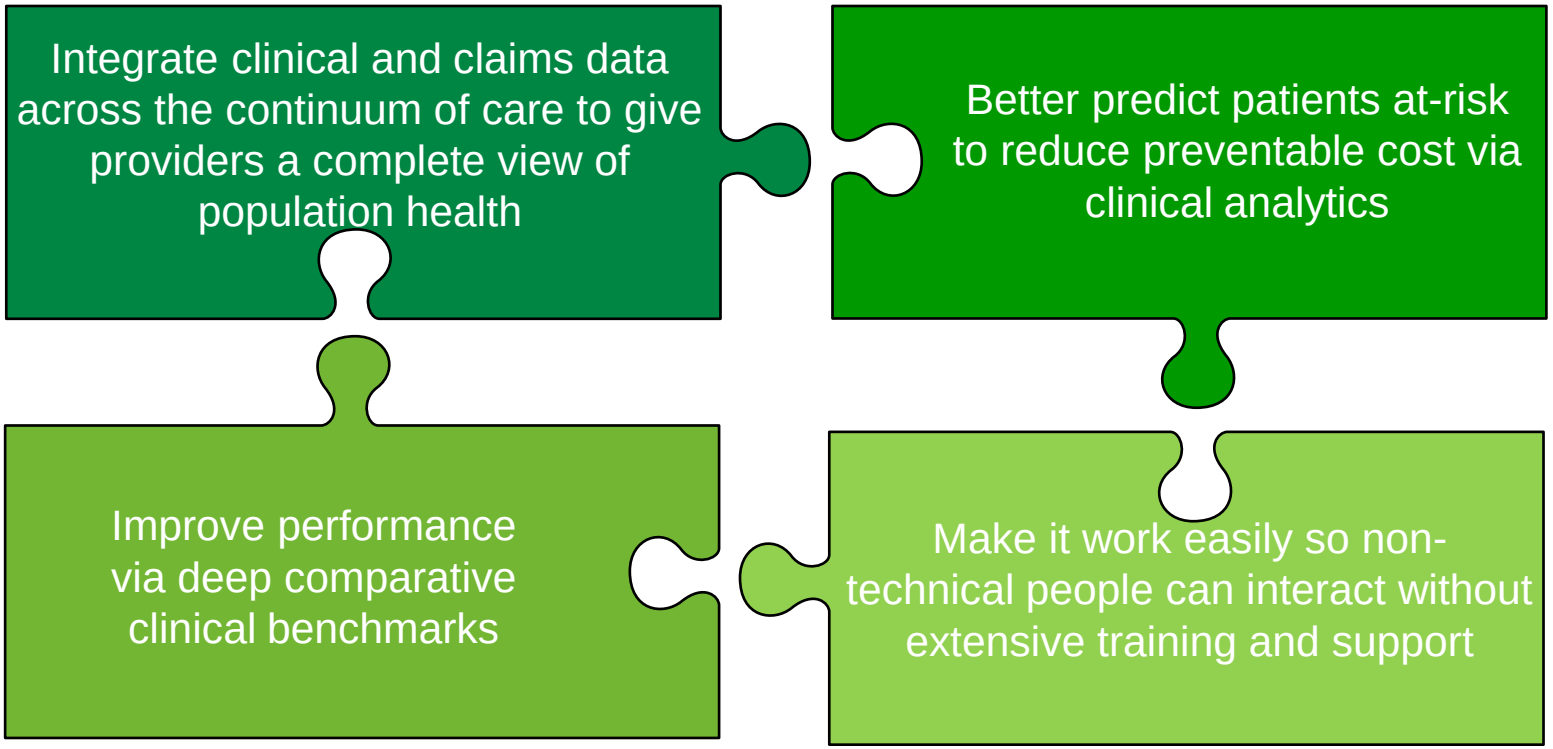
How Does Humedica Help Provider Organizations?



Clinical Analytics Purpose-Built for Healthcare

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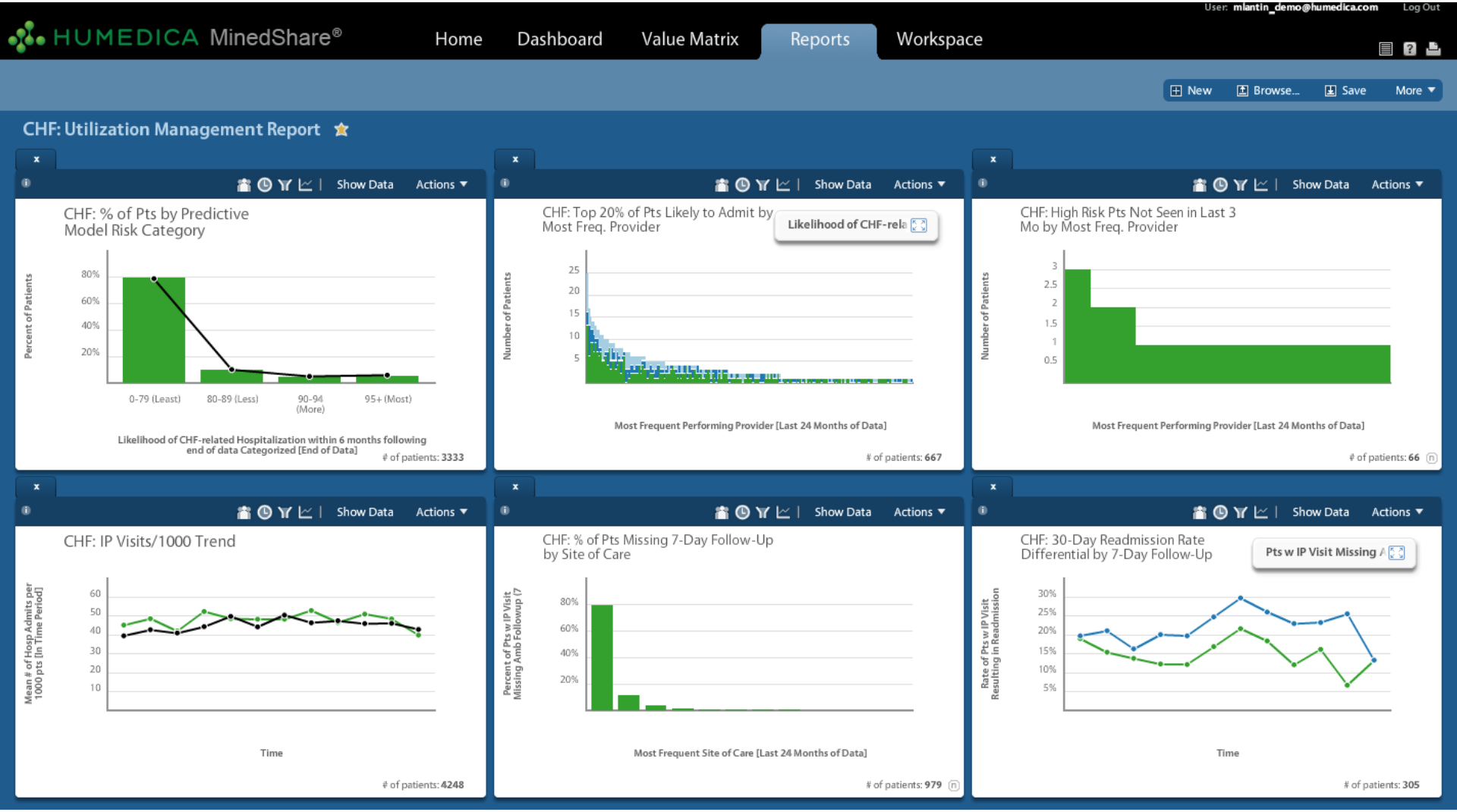
What We Can Learn from Clinical Analytics and Comparative Data



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Key Considerations for Delivering Actionable Data to the Front Lines

- Who
  - Who is determining the asking the clinical and/or quality questions?
  - Who is defining the parameters?
  - Who will drive the analytics in Humedica MinedShare?
- What
  - What are the analytic parameters?
  - What are the common definitions? E.g., Cohort definitions, quality thresholds
- How
  - How will the clinical insight be delivered?
  - How will the data be operationalized?

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Three Organizations Using Clinical Analytics to Optimize Care Coordination

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Community Health Network

Using Clinical Analytics to Optimize Care Coordination at Community Health Network

Mary Jane Lowrance, RN, MSN, MBA
Chief Nurse Executive
Community Physician Network

Community Health Network

- Established in 1956 as a not-for-profit hospital on the East side of Indianapolis
- 2013-over 200 sites of care, 8 hospitals and affiliates throughout Central Indiana
- Integrated multispecialty physician group, Community Physician Network, has more than 500 physicians providing comprehensive care at more than 100 locations
- >1,000,000 outpatient visits annually
- New conversion to EPIC (April-November 2012) for all sites of care, and 4 hospitals
- Leader in Quality Health First measures

How we all work together

TCN 2012 Stats

- Readmission Rate in 30 Days – All Cause
  - All DRGs – 18.3%
  - Only HF, PN and AMI – 2.1%
    - Avoided Loss in Reimbursement = $38,014
    - Decrease of 57.1% in 30 days Prior/After
    - Decrease of 65.0% in 6 months Prior/After
- ED Visits
  - Decrease of 28.6% in 30 days Prior/After
  - Decrease of 56.4% in 6 months Prior/After

Quality Data Assistants (QDAs)

- Practices were only doing so much with data
- Dedicated team to go after missing data, missing patients, missing revenue.
- 4 then 6, divided the work among 70+ practices
- Prep charts for the week to alert staff to protocols, contact patients for appointments or records, schedule appointments with providers as needed, update discreet data points to allow capture, obtaining records from outside sources to satisfy quality measures.
- Provide education to staff & providers to document for credit

Quality Number Improvements

CLMP, Carmel, Olio

Metric Name	Test	NCM sites 5/27/2010	NCM sites 6/22/2011	NCM sites 4/23/2012	No-NCM 4/23/2012	Difference
Diabetes Care	BP < 135/85	61.30%	62.56%	67.20%	63.07%	4.13%
	BP Captured (Diab)	92.98%	94.78%	95.77%	93.34%	2.43%
	Diab LDL Controlled	64.16%	66.50%	68.12%	66.84%	1.28%
	Eye Exam Captured	37.76%	45.22%	54.68%	44.23%	10.45%
	Foot Examination	71.13%	80.23%	86.40%	76.38%	10.02%
	HbA1c < = 8	na	na	79.54%	75.86%	3.68%
	HgbA1c Captured	63.00%	73.69%	82.65%	69.56%	13.09%
	LDL Captured	72.61%	79.30%	83.67%	76.05%	7.62%
	Nephropathy	58.89%	70.21%	81.99%	67.46%	14.53%
Preventative Screenings	Chlamydia	28.61%	46.22%	49.04%	48.98%	0.06%
	Colorectal Screening	58.74%	65.54%	73.83%	65.21%	8.62%
	Mammogram	64.11%	68.00%	71.40%	64.54%	6.86%
	Osteoporosis Screening	52.31%	66.79%	78.38%	60.79%	17.59%
	Pap Ages 21-29	62.59%	75.11%	75.96%	76.08%	-0.12%
	Pap Ages 30-65	76.43%	80.56%	83.58%	76.67%	6.91%

Why We Needed Clinical Analytics

- Quality program was good but it lacked
- Claims data versus clinical data - BIG difference
- Risk stratification- who did we really need to get to?
- Humedica demo at AMGA blew me away
  - ✓ flexibility to explore and change questions without needing to depend on reporting
  - ✓Simple, easy clicks versus asking and waiting weeks (or longer) for someone to run a report out of the EMR

Humedica MinedShare at CPN/CHNw

- Triple aim focused
- ACC formation
- Validation of Epic data
- True Population Mgt
  - Limited number of people with full access- important to define the questions accurately- so there is one version of truth.
  - Push out model

HealthMark Pilot Model

Risk Stratification:

A standardized predictive process to identify the top 2% highest risk Healthmark insurance patients

Intensive Primary Care Team (IPCT): NCM's

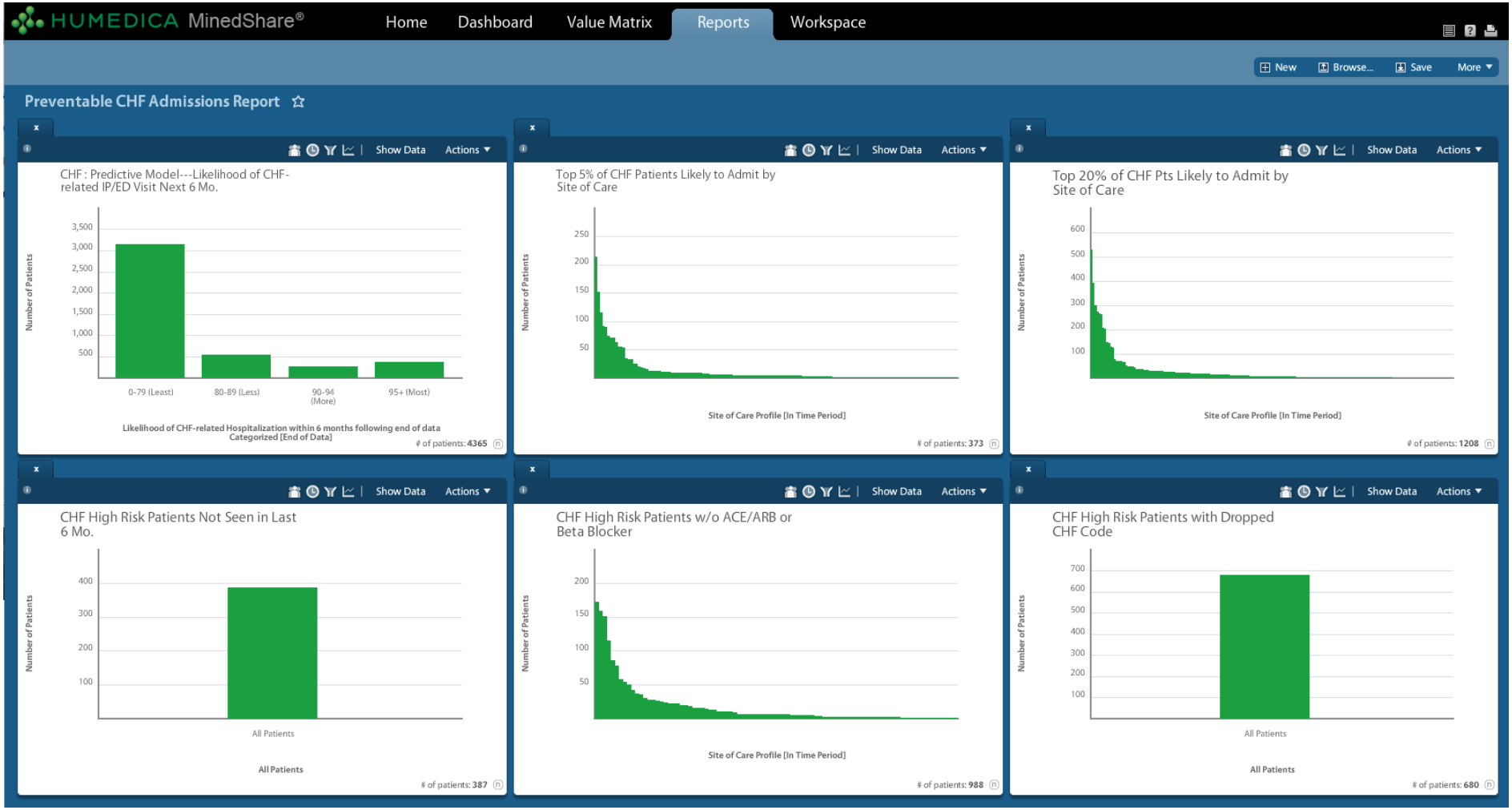
Assess and resolve the medical, social and behavioral barriers for the highest risk patients to improve their care delivery and satisfaction

-Decrease pharmacy costs

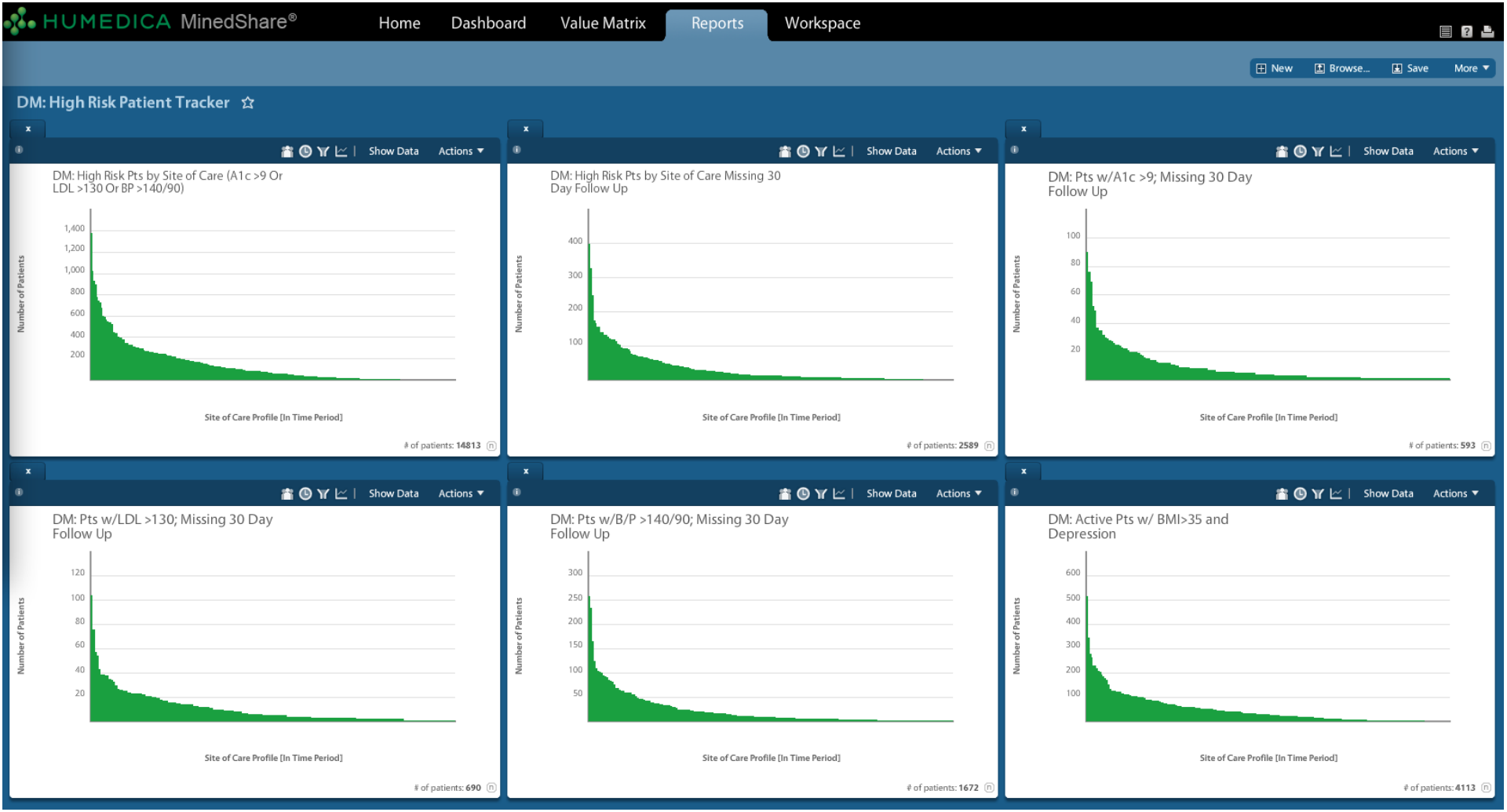
-Decrease ER utilization

-Use of community resources

CHF Predictive Model Report



DM High Risk Patient Tracker



Lessons learned so far

- Without the kind of data Mindshare can provide, you're only getting part of the picture
  - ✓ Uncoded patients (way more than anticipated)
  - ✓ ER utilizers- $$
  - ✓ Cause and effect answers
  - ✓ Comparisons… how good or how bad
  - ✓ Can make physicians believers
  - ✓ Dedicated staff to pursue what is uncovered
  - ✓ Now to bigger populations

MAYO CLINIC
HEALTH SYSTEM

Converting Data into Value in Care Coordination Efforts

Alan Krumholz MD, FAAP, DFACMQ

Mayo Clinic Health System

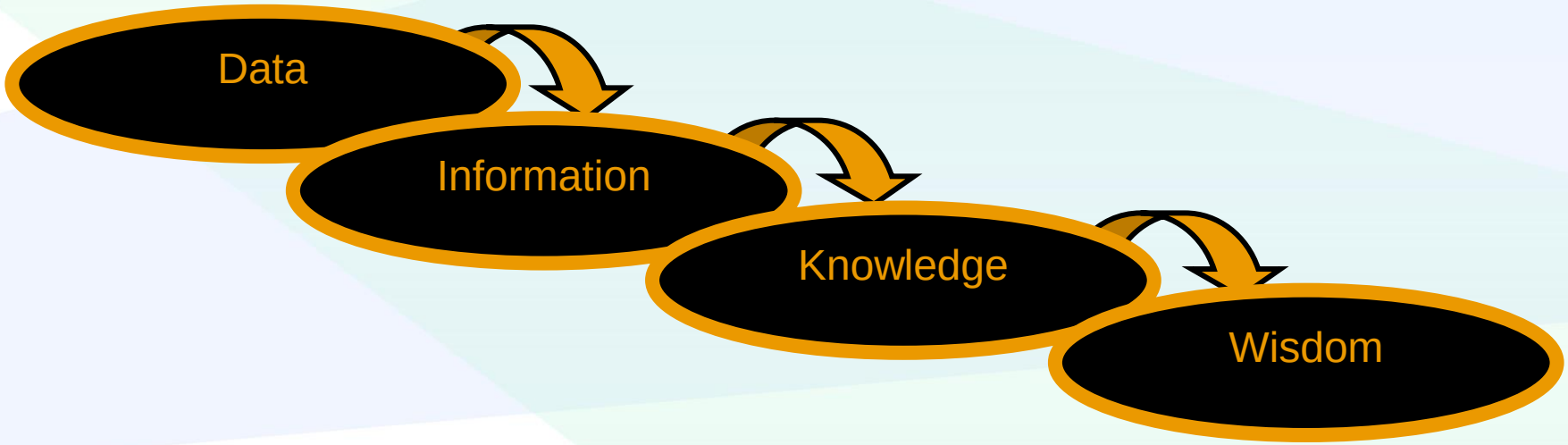
MCHS employs over 900 providers in Iowa, Minnesota and Wisconsin.

One System – Four Regions

- Moving from volume to value, but different approaches to contracting (commercial ACOs, employer contracts, no contracts)
- Focused on proactive patient management, but varied priorities and resourcing (PCMH, disease-specific outreach, etc.)
- Previously limited view of population and disparate access to claims data, but all looking for more ***sophisticated clinical analytics***

What is “Informatics”

Informatics: The science of organizing and analyzing data into useful information, providing easier access to more knowledge for wiser decisions



Today’s Technology has Enabled Informatics

Alice's Paradox

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

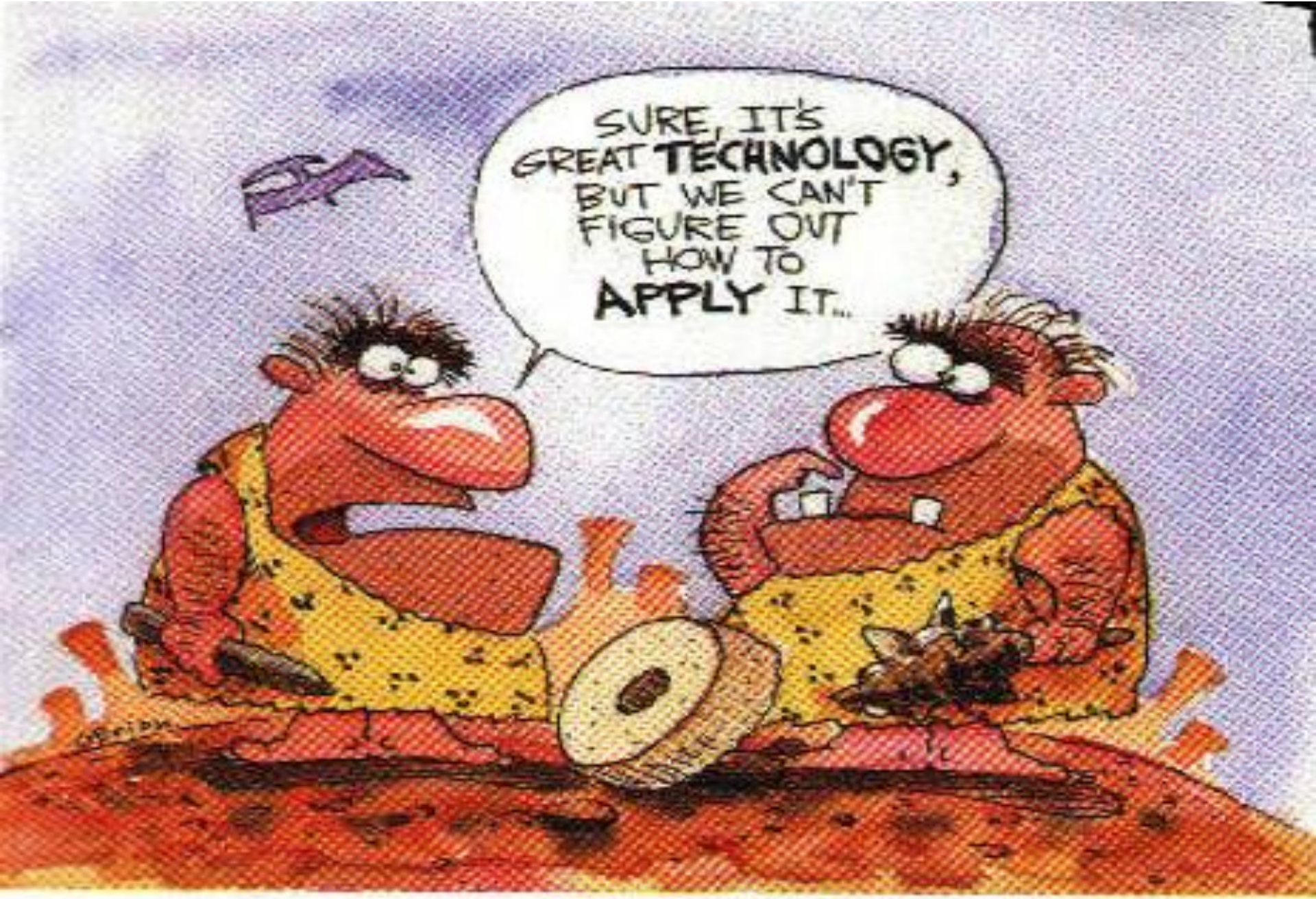
- Lewis Carroll, *Through the Looking Glass*

Corollary for Healthcare:

To know how to improve we must measure it!

Humedica MinedShare®

- Implemented in October 2012 to bring together clinical and cost data
- Governance and delivery focused on:
  1. Education
     - Weekly region-specific training sessions to analyze and discuss data trends
  2. Adoption
     - Formal request/review process that asks: **"What are you going to DO with the data?"**



VIRGINIA BUSINESS NOVEMBER 1988

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

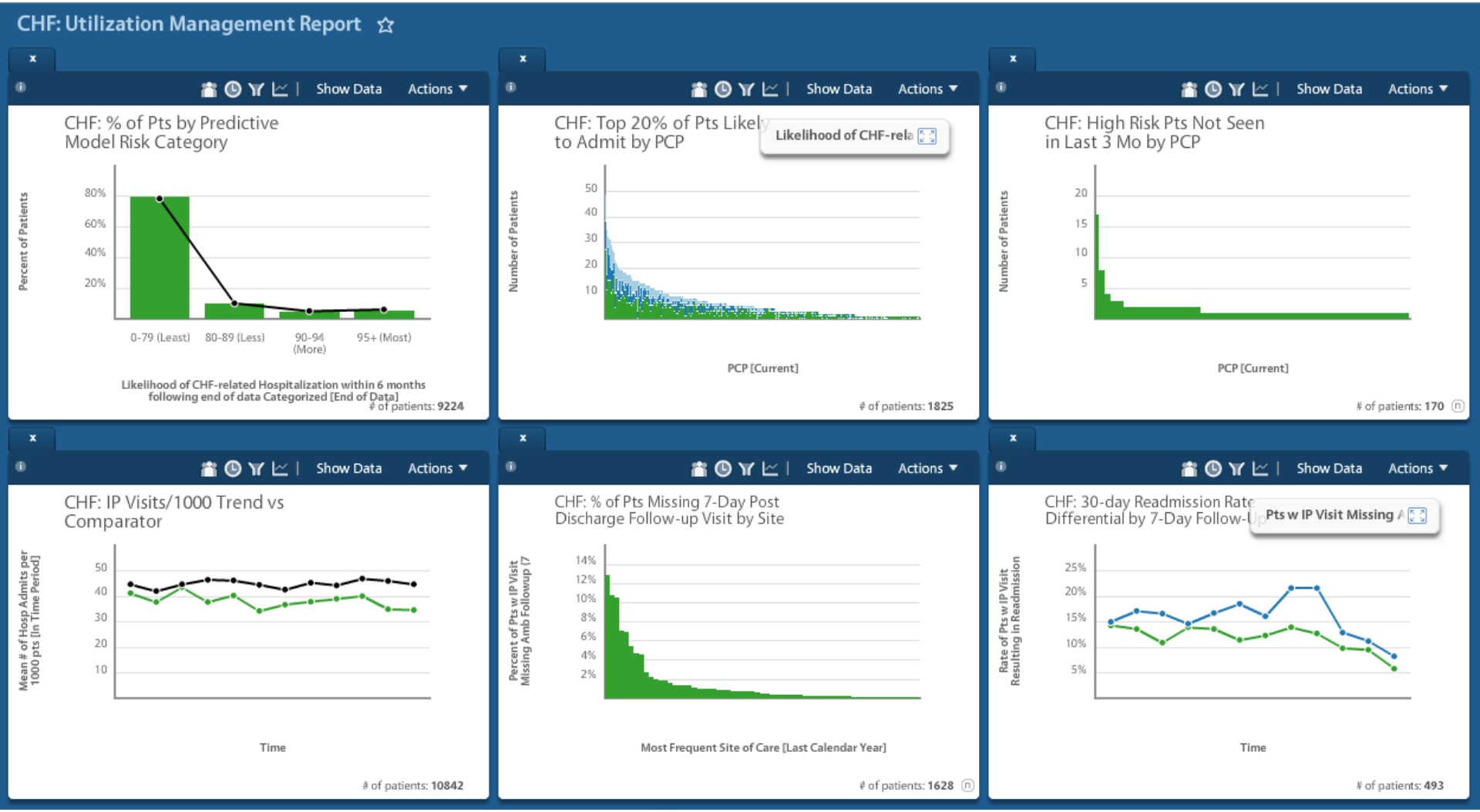
Examples of Humedica MinedShare Reports in Use

- Preventive Services (E&Ms, mammograms, colonoscopies, BMI screenings, etc.)
- High Utilizers (ED frequent fliers, readmits, patients missing PCP follow-up visits, etc.)
- Chronic Disease Management (Diabetes, Hypertension and Heart Failure screenings, risk stratification and clinical outcomes, etc.)
- Panel Management (risk adjusted panel sizing, RVUs, control rates, E&M utilization, etc.)

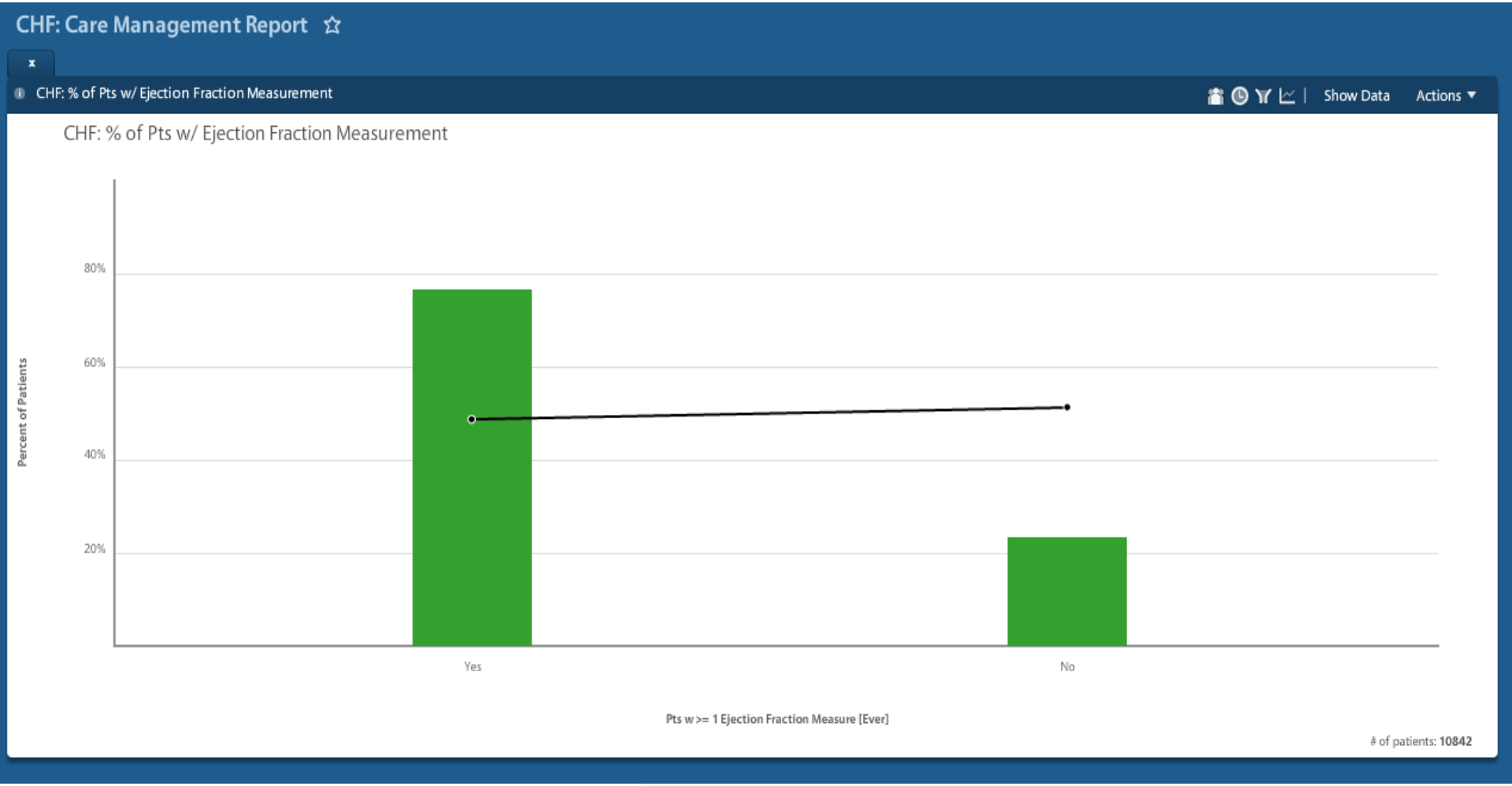
Additional Humedica MinedShare Use Cases

- Uncoded chronic diease patients
- CHF patients missing EF reading
- Patients with > 5 ED visits (12 months)
- Mean RVUs by Risk Score (by PCP)
- CHF at-risk for admissions (MinedShare predictive model)

Population Risk Management: Clinically-Based, Predictive Modeling (CHF)

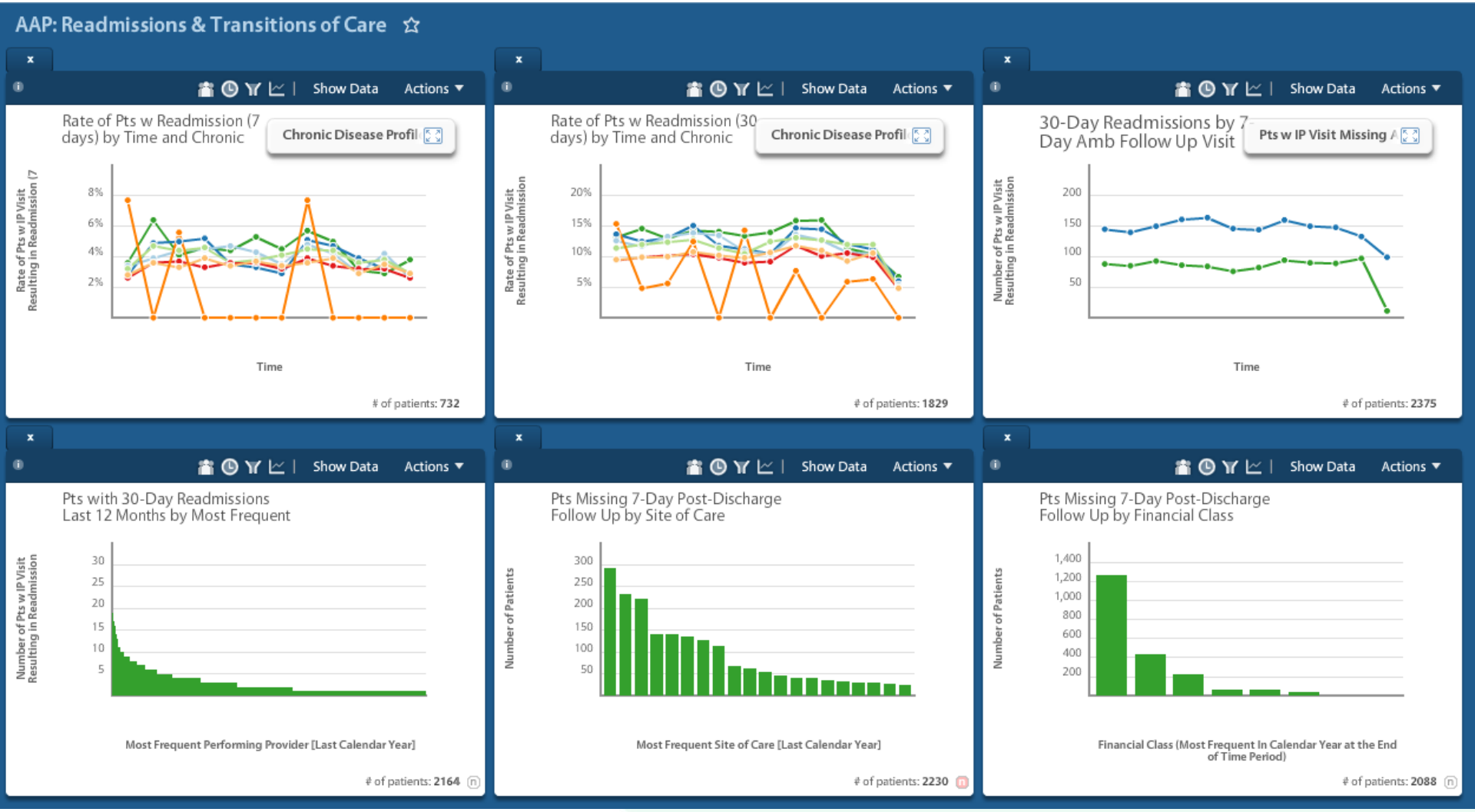


CHF Care Management: EF Measurements

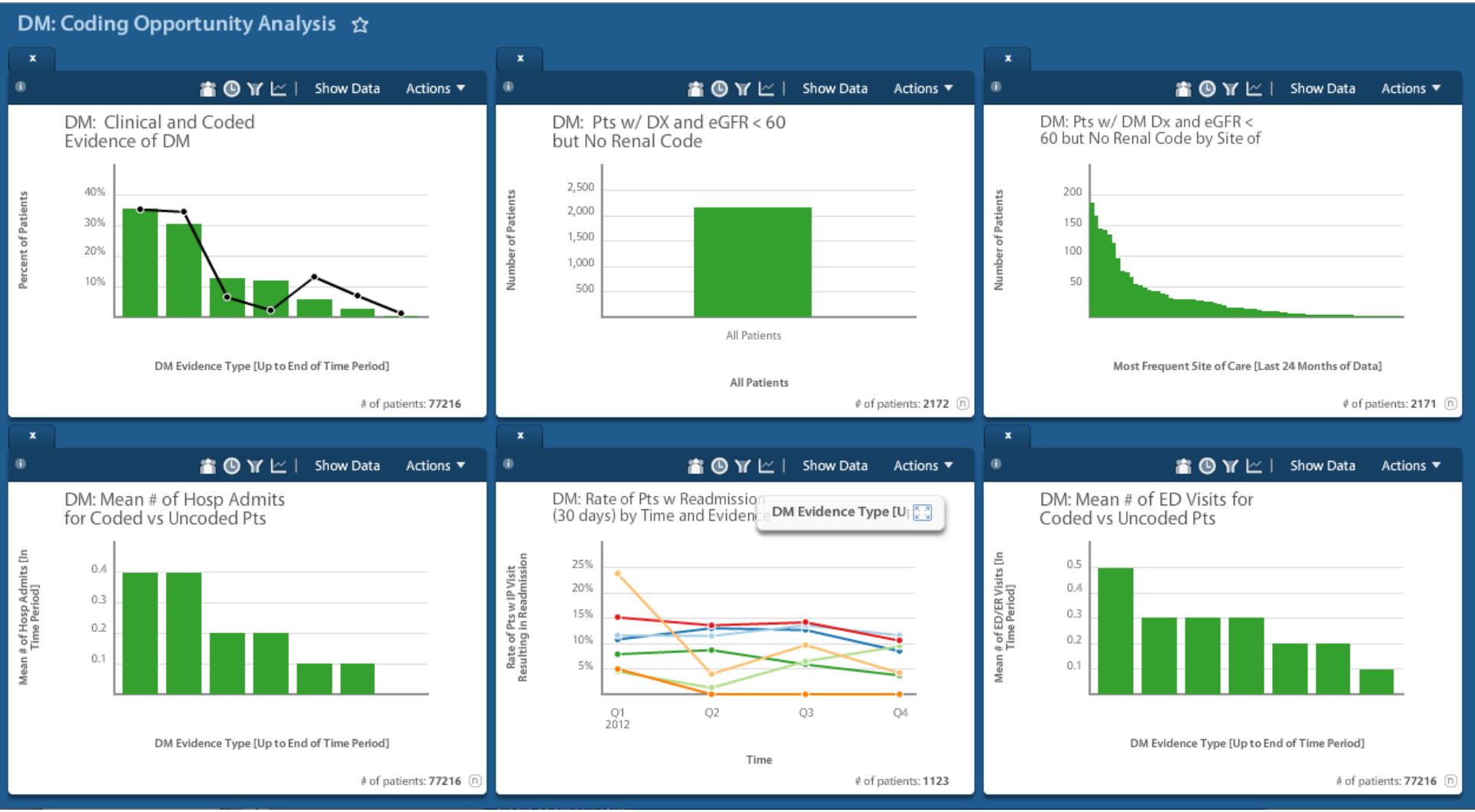


Managing High Utilizers

Transitions of Care



DM: The Impact of Uncoded Patients



DM: The Impact of Uncoded Patients

Key Takeaways

- Learn your data before using it
  - **Evaluate**: 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 application
- Design initiatives with measurement in mind

Clinical Analytics to Optimize Care, Improve Outcomes

AMGA Annual Conference
March 15, 2013
Brittany Crye, MHA
Jonathan Hines, MD

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Wilmington Health

- 147 Providers
- 20 Locations
- Multispecialty group

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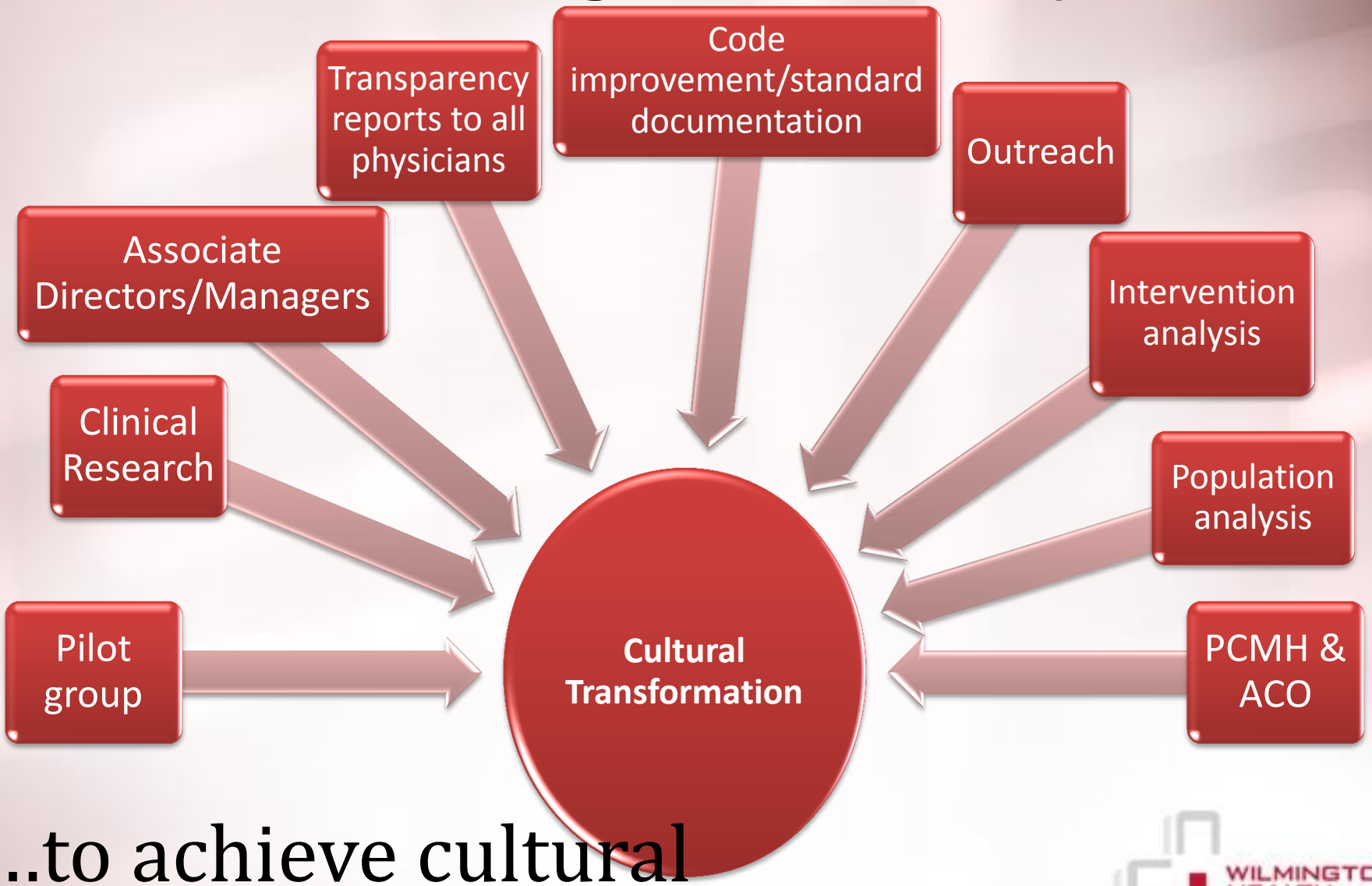
How we're using clinical analytics…



…to achieve cultural transformation

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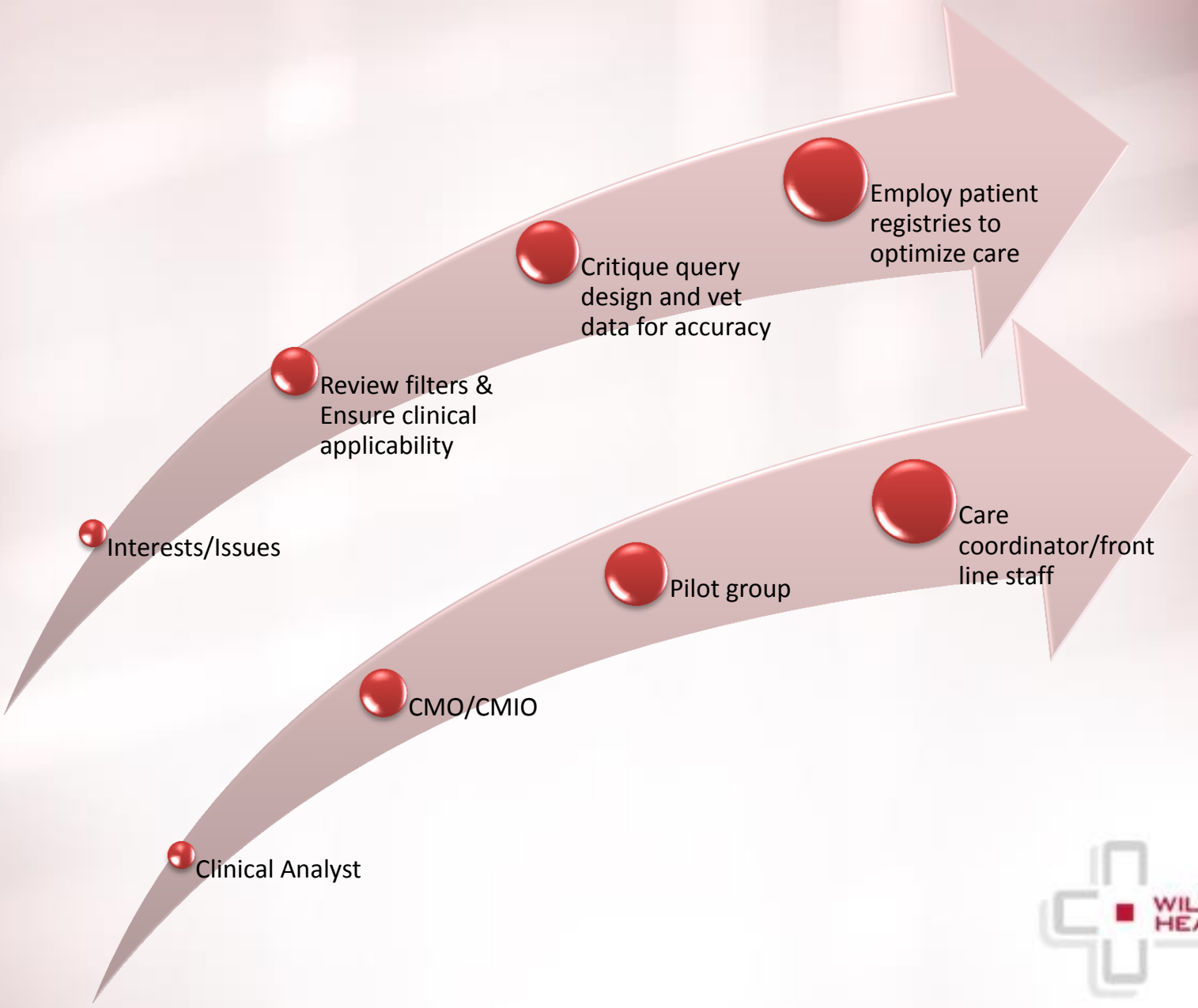
Care Coordination Process Flow



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Clinical Analytics Pilot

Members

- Consists of 10 providers
  - IM
  - FM
  - OB/GYN
  - Pediatrics
  - Endocrinology
- Director of Lean
- Associate Clinical Directors/Managers

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Clinical Analytics Pilot

Roles and Responsibilities

- Contribute to the development of meaningful, actionable metrics
- Challenge query proposals and design
- Multiple rounds of data vetting
- Share best practices
- Standardize documentation
- Review outreach program materials
- Champion forward thinking
- Promote cultural transformation

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Clinical Analytics Pilot

1. **Meaningful, actionable metrics**

- Do metrics truly reflect the quality of care?
- Do our metrics align with standard recommendations in the literature?
- How to strike a balance between simplicity of measurement and complexity of the work?
- How will our efforts at measurement affect our requirements to standardize documentation?
- How to distinguish performance metrics from outreach metrics?

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Clinical Analytics Pilot
1. **Meaningful, actionable metrics**

Performance metrics

- **Gaps in care**
  - Rate of Pts with E&M visit in 15 months
  - Rate of Pts with foot exam in 15 months
  - Rate of Pts with eye exam in 15 months
- **Quality of Care**
  - Rate of Pts with A1c<9
  - Rate of Pts with A1c<11
  - Rate of Pts with A1c
    - <7 for 18-64 yo
    - <8 for 65-75 yo
  - Rate of Pts with BP< 140/90 on at least 70% of readings
  - Rate of Pts with LDL<100
  - Rate of patients meeting D3 goals

Outreach metrics

- **Gaps in care**
  - Pts without E&M visit in 15 months
  - Pts without foot exam in 15 months
  - Pts without eye exam in 15 months
- **At-risk patients**
  - Pts with A1c>9
  - Pts with A1c>11
  - Pts with BP> 160/95
  - Pts with LDL>130

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Clinical Analytics Pilot

2. Validate the Data

- Are the patient registries accurately attributed at the individual provider level?
- Do the variables identify the population in question?
- Is the clinical data mined correctly from the medical record?
- Is the clinical data reliably standardized in the medical record so that it can be mined?

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Flexibility vs. Consistency

How to balance the flexibility while ensuring that you work from one version of the "truth"?

- Develop a small, diverse pilot group or think tank of engaged providers and key players to guide the development of queries
- Create a long-term and short-term plan to use as a roadmap to keep the clinic on track and focused
- Leverage the strengths of various quality reporting tools to obtain desired data
- Employ one person to take feedback and build graphs tailored to clinic's needs and wants

Control & Governance

- Full privileges
  - Clinical Analyst
  - CMO/CMIO
  - COO
  - Sr. Director of Lean
  - Associate Director of Primary Care-PCMH
- Read-only
  - Pilot

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Quality Demonstration Project

- Systematic approach to organizational quality initiatives
- Design for multi-step “experiment” that will allow us to examine which components of our data extraction tools have the greatest impact on the quality and completeness of care given at WH.
- Utilizes Humedica MinedShare, CINA, and Allscripts reporting module

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Quality Demonstration Project

- Part A: POS Users vs. Non-Users
- Part B: Clinic-wide Transparency
- Part C: Outreach/ Population Management
- Part D: Compensation change

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Quality Demonstration Project

Part A: POS Users vs. Non-Users

Compare POS users vs. POS non-users in primary care

Metrics to follow:

- Immunizations (flu, pneumonia, tetanus)
- Cervical cancer screening
- Breast cancer screening
- Colon cancer screening
- Bone density screening

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CINA Sheet

Wilmington Health Associates

Patient Recommendation Report

[redacted] Age:48 Sex: M Seen By:Webster, Brian

Appointment Date: 4/12/2012 9:45:00 AM Report Date:4/12/2012 PCP:Webster, Brian MD

Active Diagnoses

DIABETES MELLITUS (250.00)
CONGESTIVE HEART FAILURE (428.0)
HYPERLIPIDEMIA (272.0)
ABNORMAL LIVER FUNCTION STUDIES (7
Benign Nevi vs. Papillomas (448.1)
FOREIGN BODY, CORNEA (930.0)
GASTROESOPHAGEAL REFLUX (530.81)
HYPERTROPHIC/ATROPHIC SKIN NOS (7
INJURY TO ULNAR NERVE (955.2)
KERATOSIS, ACTINIC (702.0)
KERATOSIS, SEBORRHEIC, INFLAMED (7
Lentigines/nevi/sks
MELANOMA, MALIGNANT, FACE NEC/NO
NEOP, UB, SKIN (238.2)
MORE

Risk Factors

CHD 10Yr Risk > 20%
Lt Ventricular EF not documented
Pneumonia (Age > 64 OR Risk Dx)

Goals

Goal not met: BMI >/= 30
Goal not met: A1c > 7.0%
Goal not met: LDL >70
Goal Met: Microalbumin/Creat Ratio </= 30
Goal met: BP <130/80
Goal Met: Nonsmoker

Active Meds

MetFORMIN HCl 500 MG	two ti	12/21/11
GlipiZIDE XL 5 MG	daily	01/06/12

Action Items

____Document / administer Tetanus vaccine. Consider Tdap if patient has not received Tdap x1 dose yet. PREV

DOC: Document or perform Diabetic Foot Exam DM
DOC: Document or address Obesity Dx / Plan (yearly) DM

MED: Evaluate DM therapy plan due to A1c goal not met DM
MED: Consider ACEI or ARB* for Dx Heart Failure (EF % unknown / not documented in PMH) HF
MED: NOTE: Drug therapy C/I may exist: Address LDL goal not met. CAD
MED: Consider ASA / Anti-plt tx* due to CAD / CHD Risk > 20% CAD
MED: Consider Beta Blocker* for Dx Heart Failure HF

REFER: Consider referral for Diabetic Education (rec q 3 yrs) DM
REFER: Perform / Refer to Ophthamology for Diabetic Eye Exam (yearly) DM

Labs

Trig	100	mg/dl	12/20/11
Chol	180	mg/dl	12/20/11
LDL	121	Calc	12/20/11
HDL	39	mg/dl	12/20/11
Gluc, Fasting			
Gluc, Random	268	mg/dl	12/20/11
HbA1c	13	%	12/20/11
MicroAlb/Cr	7.42	Calc	11/13/08
PSA			

Measures / Calculations

BP	122/84	1/06/12
	102/66	2/14/10
CHD Risk	>20%	
BMI (Wt)	31.1 (228lb)	1/06/12
Ideal Wt.	146- 183	
Est. CrCl	120.39	12/20/11

Diagnostic Testing

Colonoscopy

Insurance:

BCBS SMART CHOICE
NC State Health Plan
CVS/Caremark Primary Pr

Routine Visits:

Next Visit: 07/09/2012
Last Visit: 01/09/2012

Comp. Exam Visits:

Next Visit:
Last Visit: 09/29/2011

Vaccine

Tetanus	
Tdap	
Pneumoccal	4/30/09
Flu	10/01/11
Herpes Zoster	

Next Appt. Date:

2-3 mos	HF
3 mos	DM
6 mos	CAD
6 mos	HTN

*--Unless contraindicated

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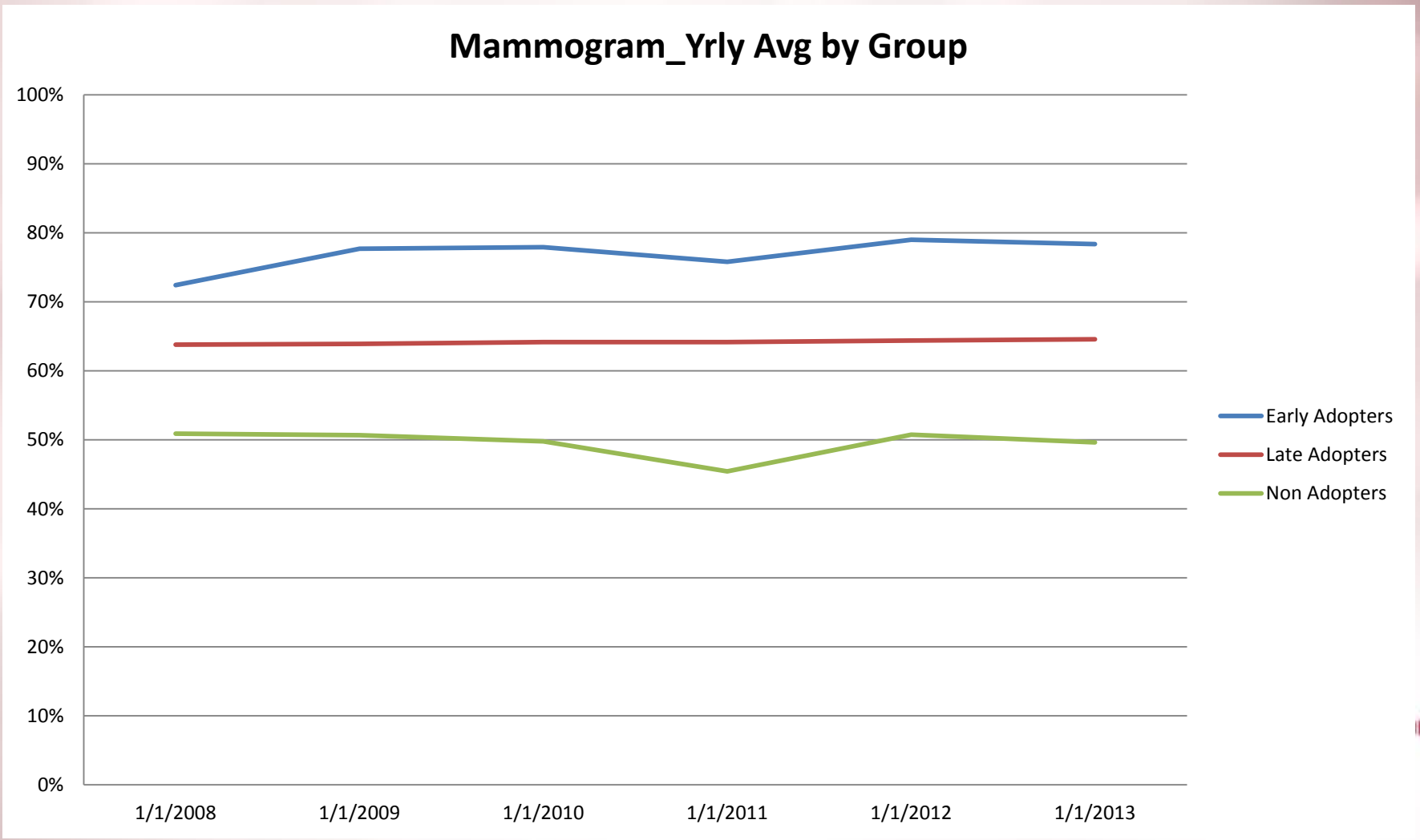
Quality Demonstration Project

Part A: POS Users vs. Non-Users



Quality Demonstration Project

Part B: Clinic-wide Transparency

Track performance of individual providers on a host of quality metrics in response to routine, clinic-wide sharing of quality data

- **Metrics to follow:**
  - HTN
    - % of patients with last BP<140/90
  - Preventative Care
    - % of patients with breast cancer screening
    - % of patients with cervical cancer screening
    - % of patients with colon cancer screening
    - % of patients with influenza immunization
    - % of patients with pneumococcal vaccination

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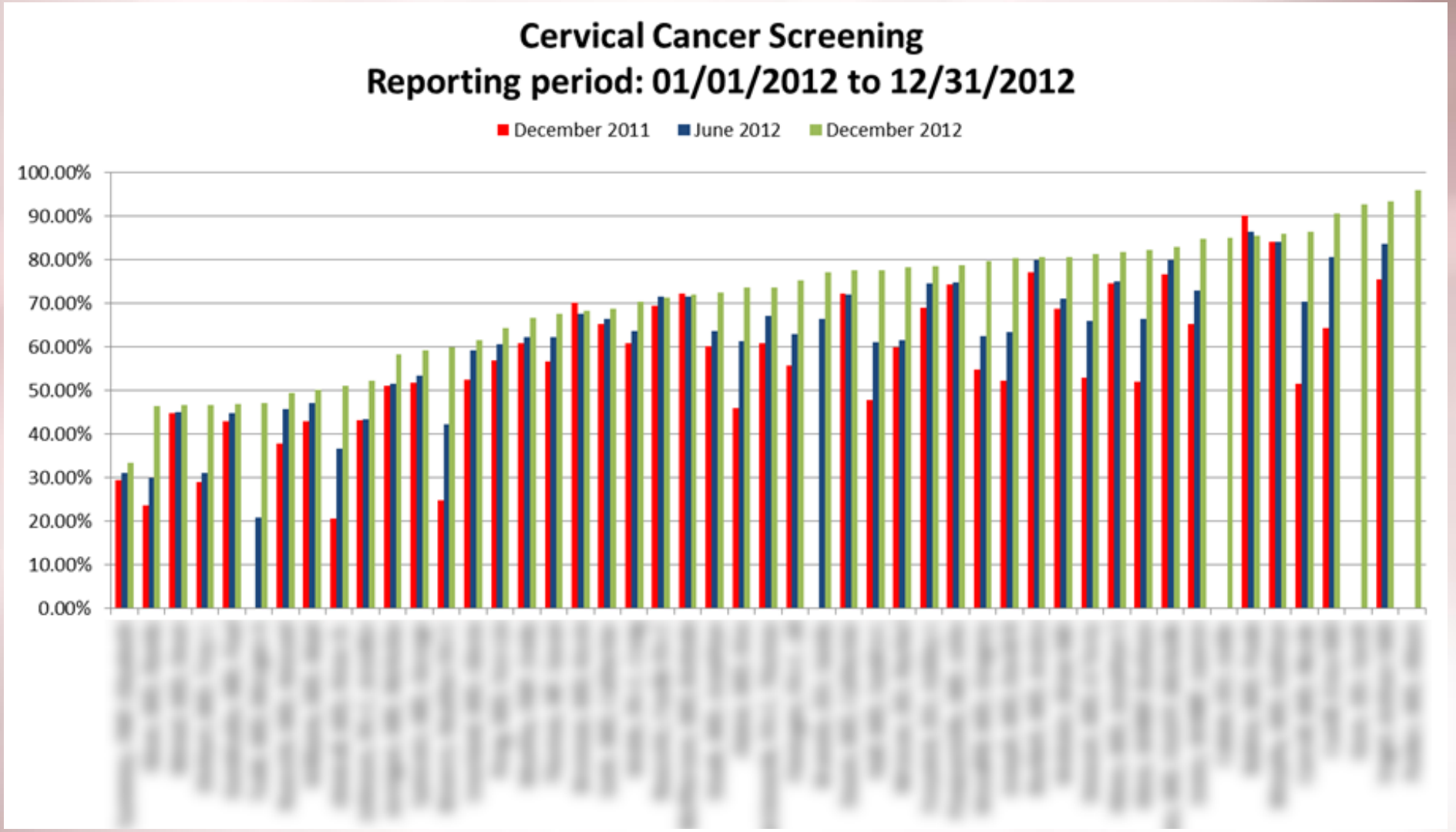
Quality Demonstration Project

Part B: Clinic-wide Transparency



Quality Demonstration Project

Part C: Outreach/ Population Management

Assess how outreach efforts impact patient outcomes and compliance

Metrics to follow:

- Compare pilot group to non-pilot group on outreach metrics
  - A1c>9
  - A1c>9 and no DSME
  - No A1c in 15 months
- Track ROI

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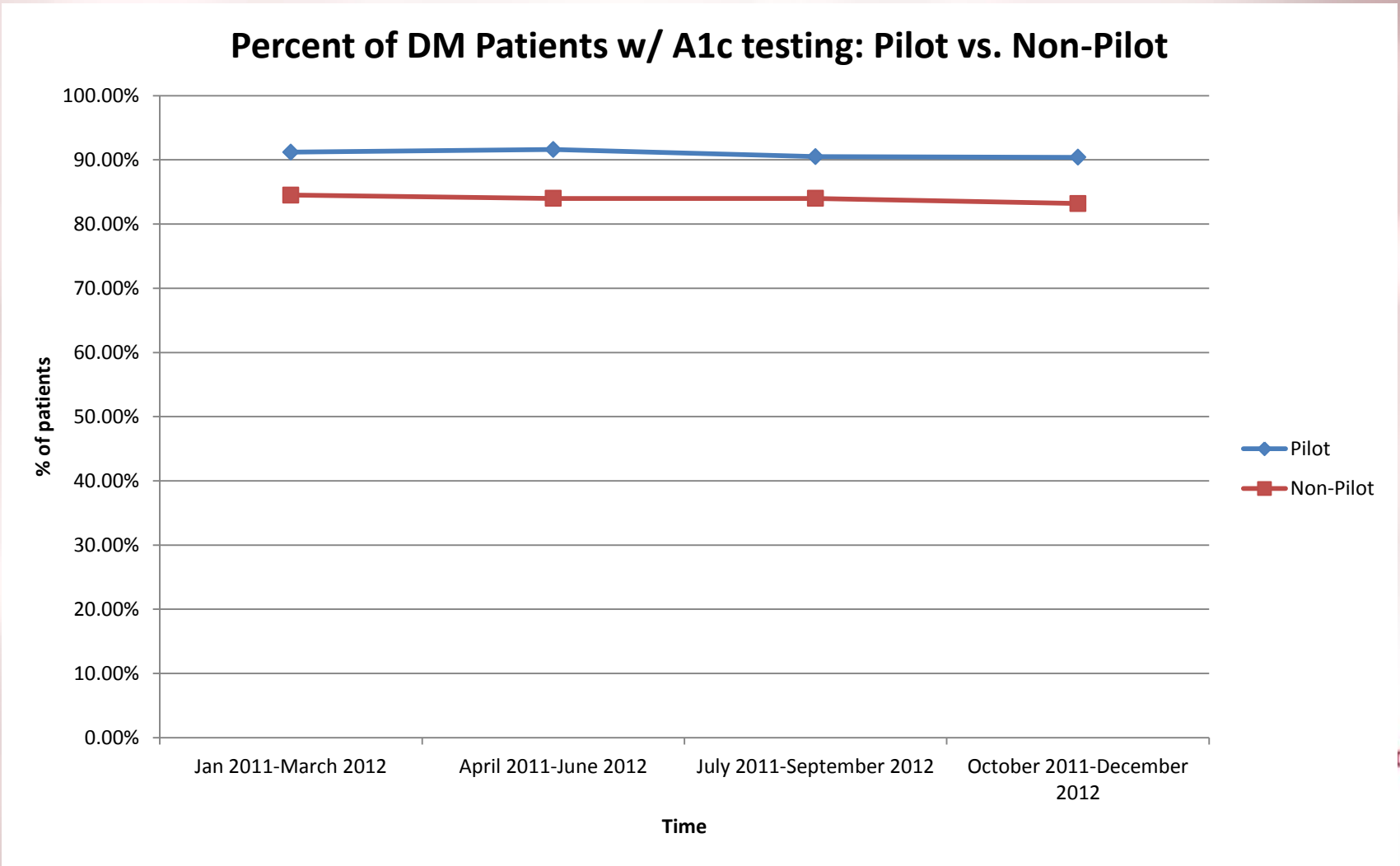
Quality Demonstration Project

Part C: Outreach/ Population Management



Quality Demonstration Project

Part D: Compensation change

Track global and individual performance following initiation of a compensation change that ties a portion of compensation to quality metrics.

Metrics to follow:

- TBD

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Quality Demonstration Project

- Will allow us to incrementally evaluate the effects of each variable and determine next steps
  - POS tool (CINA)
  - Clinic-wide Transparency
  - Outreach
  - Tie to compensation

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Lessons Learned…

1. You can’t make everyone happy
2. The data will NEVER be PERFECT, but it must be ACCEPTABLE and ACTIONABLE
3. Focus on a **manageable** number of cohorts, **meaningful** metrics, and **quantifiable** process improvements, etc.
4. Set feasible goals and involve a leader from every affected department
5. Accurately and Precisely track the metrics and record changes in the clinic for future explanation
6. Take care to avoid any action or attitude that could be interpreted as judgmental or worse-punitive.
7. Have fun with this!

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Questions?

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