Technology Driving Performance Improvement

Julie L. Cerese

SVP, Performance Improvement
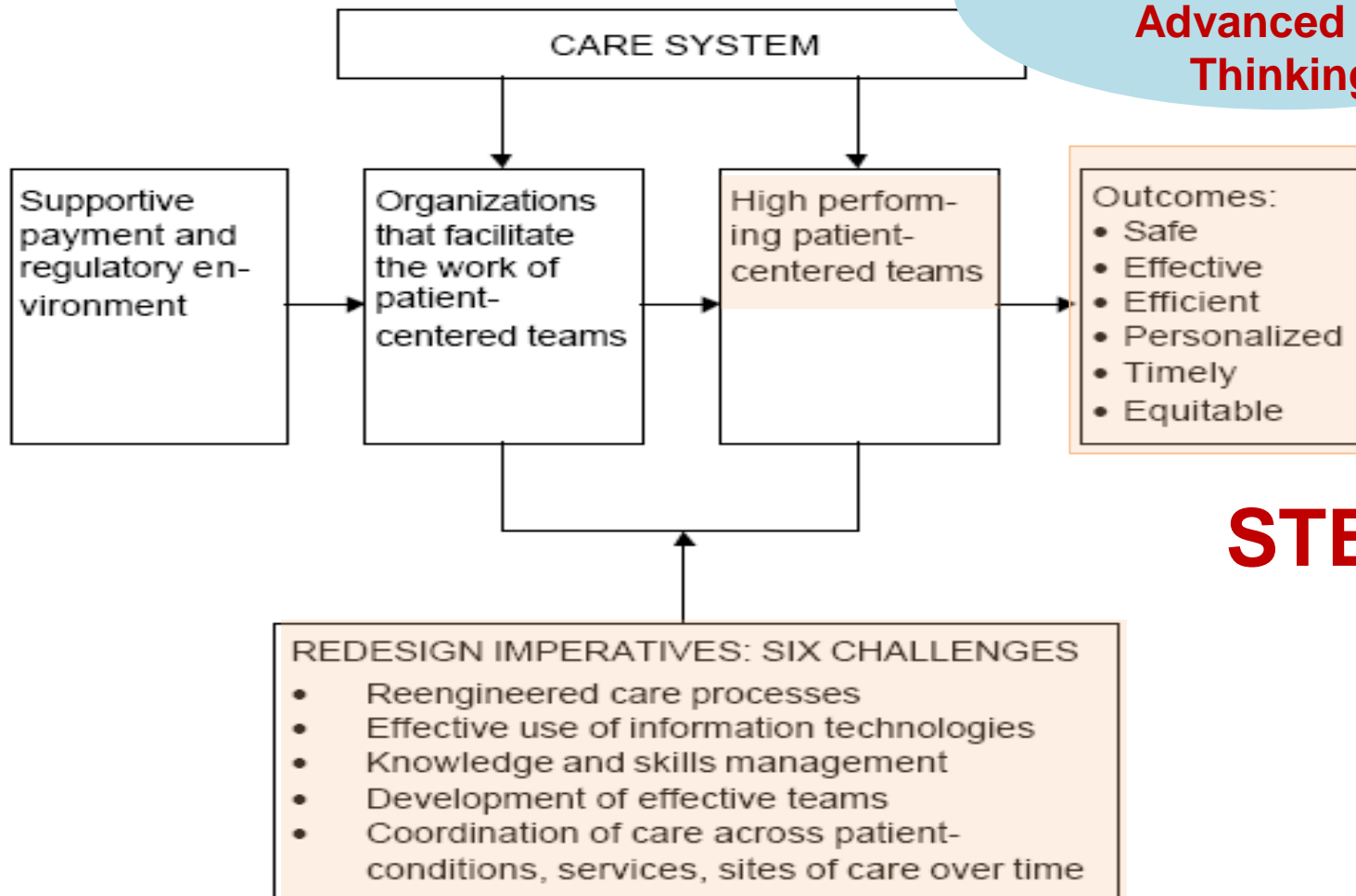
VHA-UHC Alliance NewCo

RESPONDING TO AN EVOLVING LANDSCAPE

- **Contemplating the Future**

- **What is innovation?**

- **Innovative Strategies to Improve Patient Outcomes and Care**
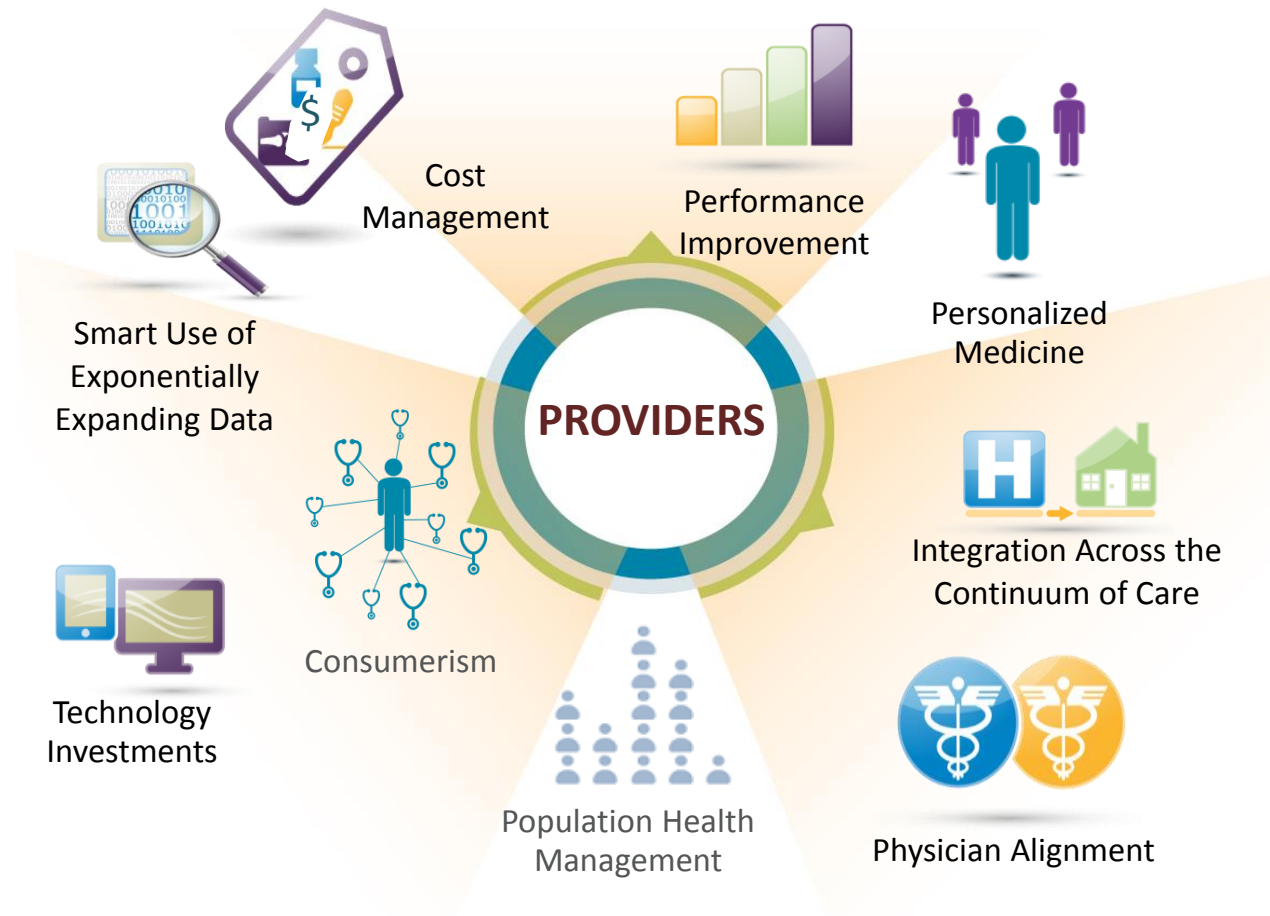
CROSSING THE QUALITY CHASM

The 2001 IOM Recommendations Advanced our Thinking

CARE SYSTEM

Supportive payment and regulatory environment	Organizations that facilitate the work of patient-centered teams	High performing patient-centered teams	Outcomes: • Safe • Effective • Efficient • Personalized • Timely • Equitable

STEEEP

REDESIGN IMPERATIVES: SIX CHALLENGES
- Reengineered care processes
- Effective use of information technologies
- Knowledge and skills management
- Development of effective teams
- Coordination of care across patient-conditions, services, sites of care over time

3

THE 2009 STIMULUS PACKAGE PROVIDES A FRAMEWORK FOR FOCUS AND INVESTMENT

- The American Recovery and Reinvestment Act Provided **$150B** for healthcare

- **BUT must…Reduce Healthcare Costs: 630B Over 10 Years to Offset the Investment**

  - Readmissions

  - Complications

  - Regional variation
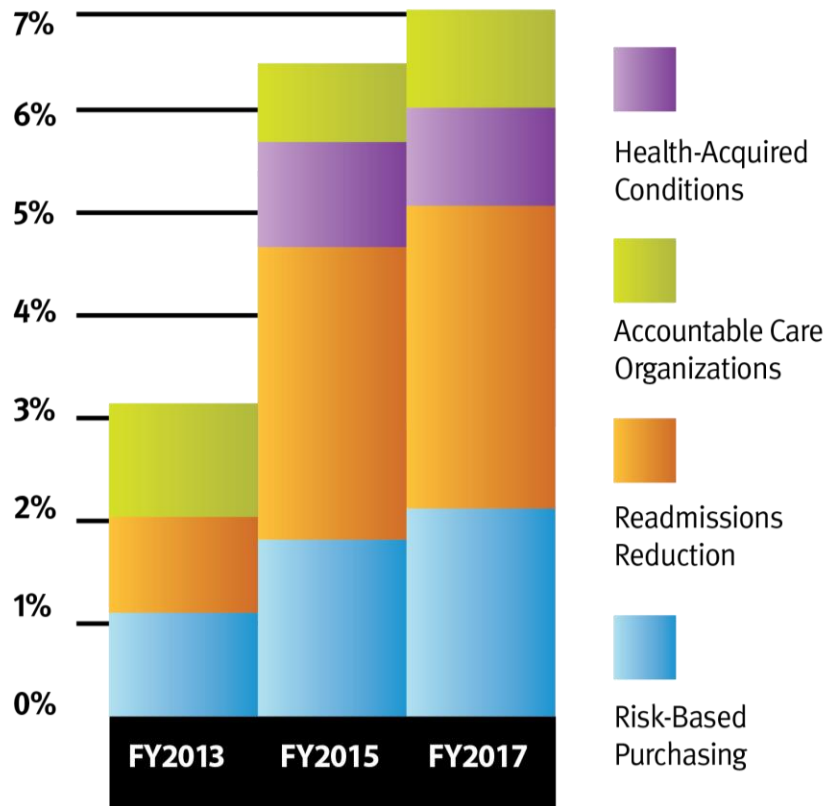
  - Reimbursement models

  - Fraud and abuse

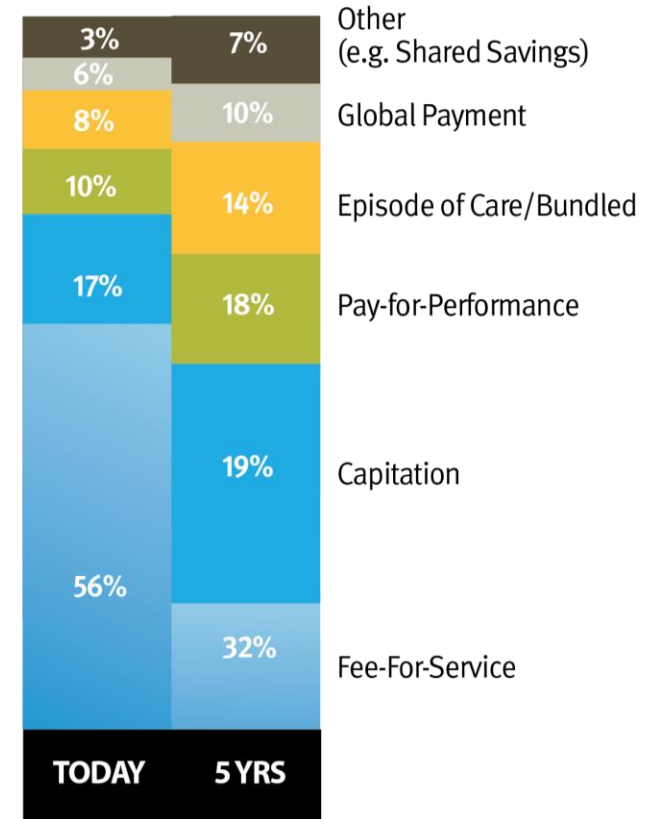# PROVIDERS ARE FACING HEIGHTENED EXPECTATIONS AND EXPANDING CHALLENGES

Cost Management

Performance Improvement

Personalized Medicine

Smart Use of Exponentially Expanding Data

PROVIDERS

Integration Across the Continuum of Care

Consumerism

Technology Investments

Population Health Management

Physician Alignment

SHIFT FROM FEE-FOR-SERVICE TO VALUE-BASED CARE

Percent of Hospital Pay Tied to Performance
(ACO Amount Depends on Model)

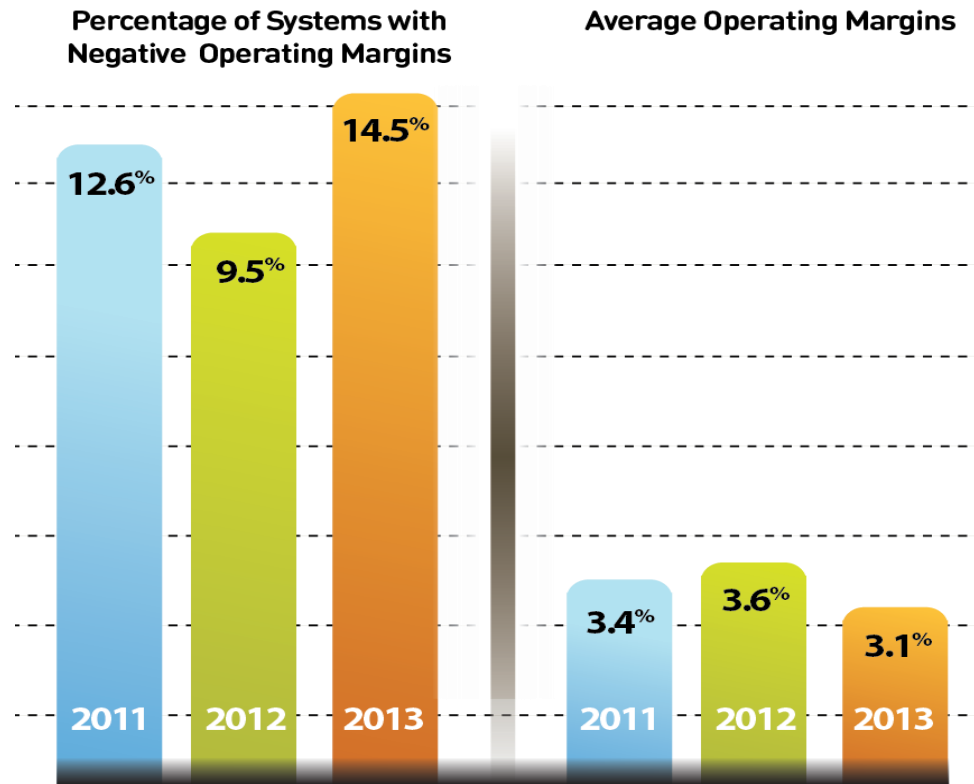Legend:
- Health-Acquired Conditions
- Accountable Care Organizations
- Readmissions Reduction
- Risk-Based Purchasing

Bars: FY2013, FY2015, FY2017

Current and Projected Mix of Payment Models within Organizations

Category	TODAY	5 YRS
Other (e.g. Shared Savings)	3%	7%
	6%	
Global Payment	8%	10%
Episode of Care/Bundled	10%	14%
Pay-for-Performance	17%	18%
Capitation		19%
Fee-For-Service	56%	32%

6

#VITAL2015

MARKET PRESSURES AND VALUE-BASED PURCHASING HAVE WEAKENED MARGINS

Percentage of Systems with Negative Operating Margins

- 2011: 12.6%
- 2012: 9.5%
- 2013: 14.5%

Average Operating Margins

- 2011: 3.4%
- 2012: 3.6%
- 2013: 3.1%

"It's been a period of investment; it's been a period of preparation...it's also been a time of financial challenges. Last year in particular was the perfect storm for us."

Terry Akin
President/CEO – Cone Health

"61.3% of organizations in [our] analysis saw their operating margins deteriorate over the previous year."

Modern Healthcare

And are Forcing Providers to Set Steep Cost Reduction Goals

Unnecessary Services
$210 Billion

Fraud
$75 Billion

Excessive
Administrative Costs
$190 Billlion

Inefficiently
Delivered
Services
$130 Billion

Prices That Are Too High
$105 Billion

Missed Prevention
Opportunities
$55 Billion

FOUR TYPES OF INNOVATION

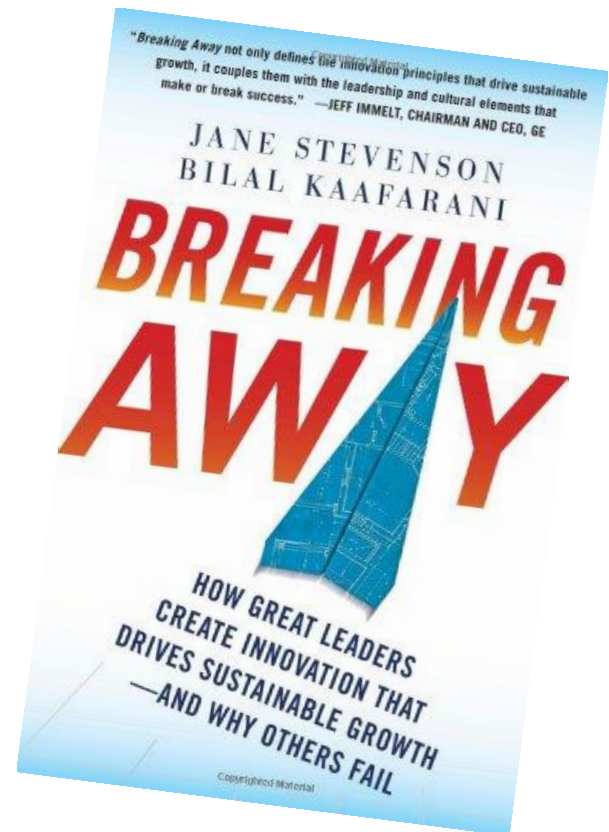**Transformational**
> A paradigm shift that changes society

Category
> Building new industry within transformation

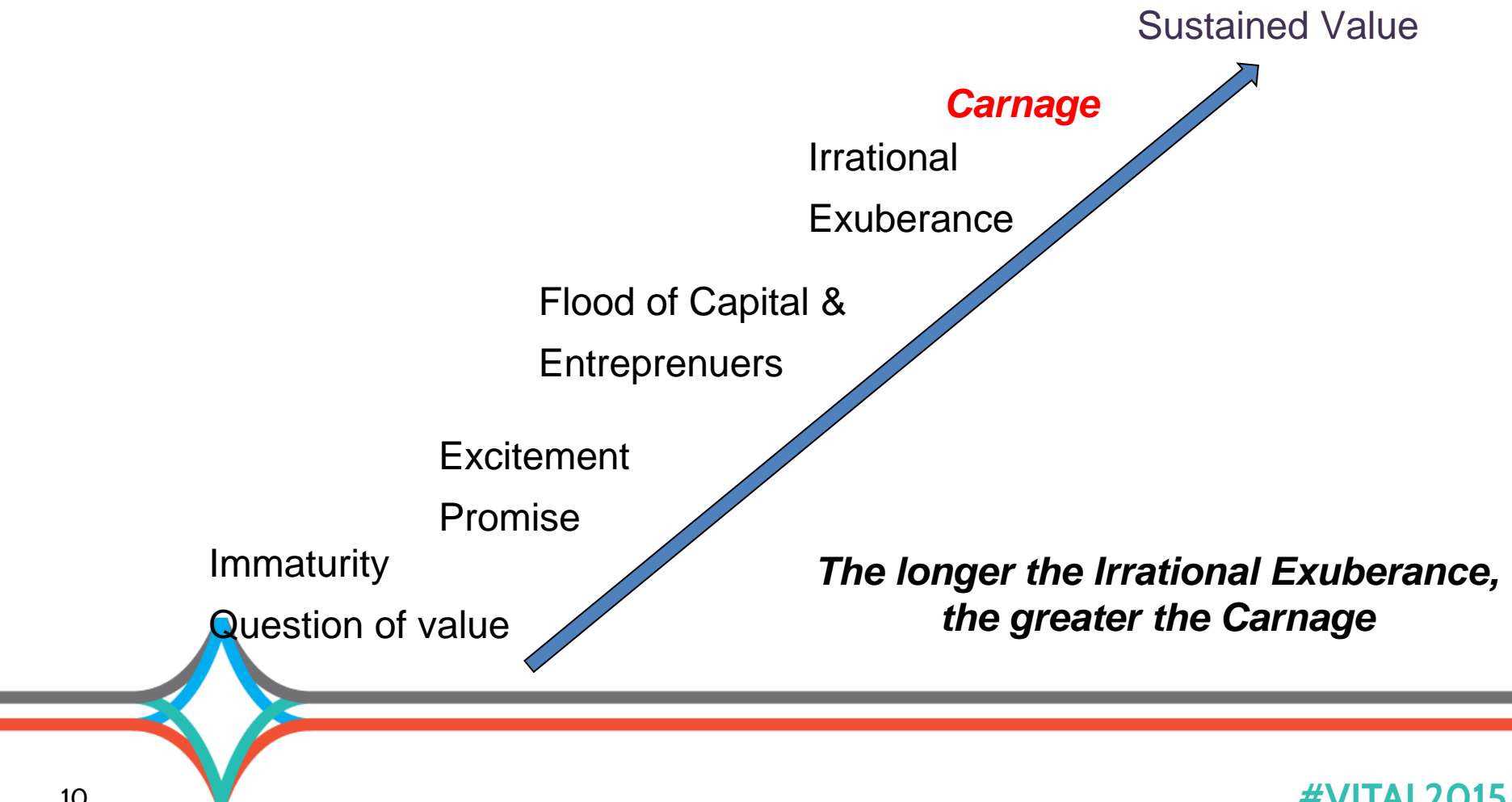**Marketplace**
> Builds or expands markets, reach new customers

Operational
> Redesign to improve business processes and customer experience

THE NATURAL MARKET EVOLUTION OF INNOVATION

Installation Period -- Deployment Period

Sustained Value

Carnage

Irrational

Exuberance

Flood of Capital &

Entreprenuers

Excitement

Promise

Immaturity

Question of value

The longer the Irrational Exuberance, the greater the Carnage

Through the Dense Fog;

Important to Differentiate the New from the Duplicative

INNOVATION = NEW IDEA, DEVICE OR METHOD

ReferralMD's Top Healthcare Technology Innovations

1. Clinical Trial Microchips

2. Google Glass

3. 3D Printed Biologic Materials

4. Hybrid Operating Rooms

5. Digestible Sensors

6. Cloud Based Provider / Patient Relationship Management

7. Optogenetics

INNOVATION = *ANYTHING* THAT CREATES & SUSTAINS VALUE

HBRs 10 Innovations that will Revolutionize Healthcare

1. Checklists
2. Behavioral Economics
3. Patient Portals
4. Payment Innovations
5. Evidence-Based Decision Making
6. ACO's
7. Regenerative Medicine
8. Virtual Visits
9. Genetics
10. Surgical Robotics

- *The first 5 are focused on increasing value rather than new ideas, devices or methods*

VALUE'' REQUIRES MATCHING PATIENT NEEDS WITH AGNOSTICS AND SITE OF SERVICE

DIAGNOSTICS

- Rational Diagnosis--as the Cochrane Collaboration has done for treatment

- Computer-guided diagnostics

- Home diagnostics, with wireless connectivity

SITE OF SERVICE

- Retail clinics, expanding into chronic care

- Urgent care, tightly affiliated with networks

- Telemedicine / teleheath

- Hospital At Home programs

- Home-based chronic care

- Online/email consultations

VALUE REQUIRES APPROPRIATE LEVEL OF CARE PROVIDER

- Specialist vs Generalist

- **MD** ➡ **NP** ➡ **RN** ➡ **LPN** ➡ **Tech**

- Community Worker

- Do it yourself

The Future: Cyberphysicians

- "Information available to professional will be available to patients

- Cyberphysicians will look after people's health, detecting changes through sensors, prompting preventive activities and treatments

  - Wearable computers; "intelligent clothing"

  - Personal agents-- "digital butlers"; smart sensing

  - Electronic circuitry connected to nerves and tissues

-

- CMO-CNO Leader Rounding

- Improving Nurse, Physician and Patient Communication

  Just say No to   *Say Hello to*
  "white boards"   *Patient Communication Boards"*

- Meeting the patient where they are…. Change your position!

- *Provide individualized feedback; how am I doing compared to my peers*

CHANGING THE WAY WE COMMUNICATE WITH PATIENTS

INDIVIDUALIZED FEEDBACK DRIVES SWIFT CHANGE

HMC Medicine - General Internal Medicine by Provider
MD Communication Updated Monthly - July 2013 to June 2014

% Yes, Definitely to did the doctor explain things in a way that was easy to understand, listen carefully to you, give you easy to understand instructions about taking care of health problems/concerns, seem to know the important information about your medical history, show respect for what you had to say, spend enough time with you

Displaying only providers with three or more surveys
(Click to display all)

Provider —— Goal = 91.0% [50pr] —— General Internal Medicine
= 90.4% [44pr], n = 364
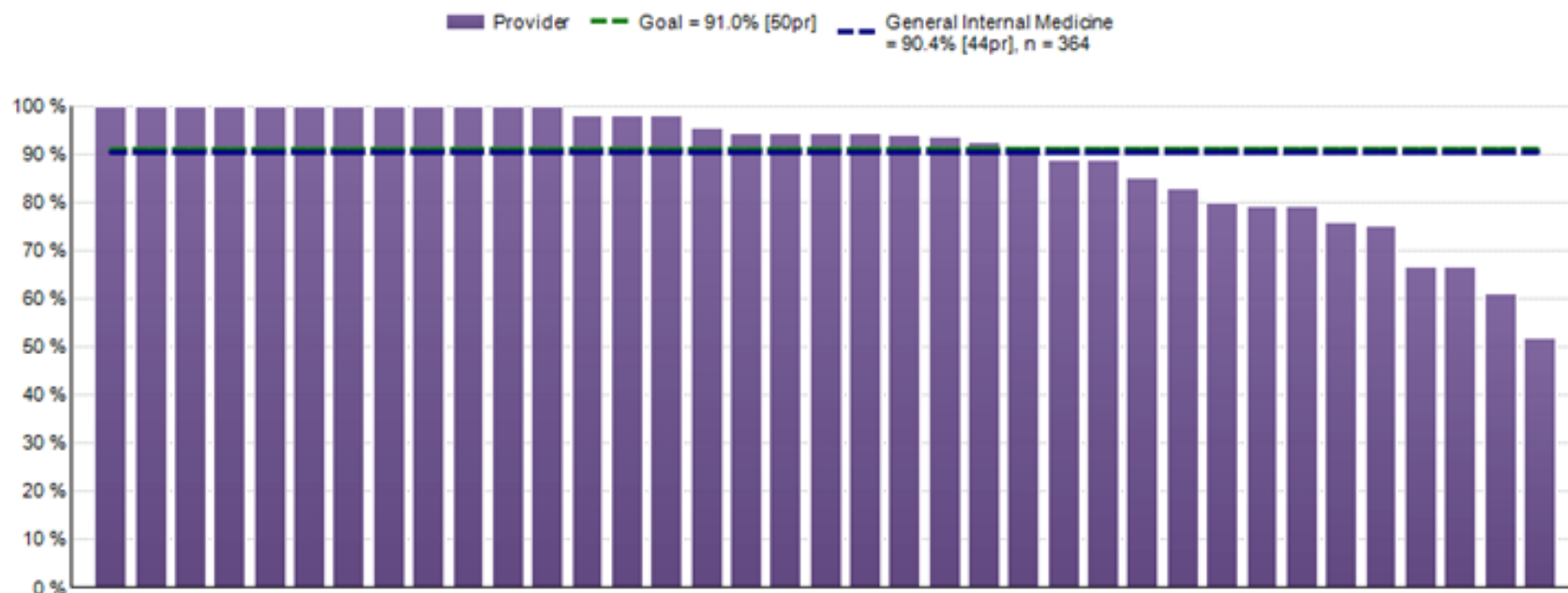
UAB eMEDICINE

Goals

- Improve access to Primary Care, extend the patient-provider relationship
- Provide appropriate site/scope of care for patients with lo-acuity conditions
- Reduce use of ED for low acuity issues
- Reduce cost of care for residents of the Birmingham MSA; actual dollar (cost) and time savings

- Solution
- Online diagnosis and treatment for common medical conditions—
  » upper respiratory infections, flu, UTI, etc. (many of the conditions most commonly treated in an urgent care setting)
- Uses adaptive, evidence-based practice logic-based software (Inst. Clinical Systems Improvement; Infectious Disease Society, etc.)
- Administered by UAB Medicine primary care MD's and NP's

UAB ᴇMEDICINE: HOW DOES IT WORK

- Patients can access the service from any desktop or mobile device 24/7

- Online visit takes ~5 minutes for patient to complete

- Guaranteed 1 hour response time during current hours of operation (congruent with UAB urgent care hours)

- $25 charge only incurred if patient completes visit and is not triaged out for additional care -- true retail model/no insurance data collected or billed

- If a prescription is required, patients can have it e-prescribed to the pharmacy of their choice

20

UAB ᴇMEDICINE RESULTS

- Total UAB eMedicine.com page views: 260,831
- Total encounters initiated: 7,756
- Total completed visits: 2,308 (30% completion rate)

- Those triaged out of the program or abandoned the system during the visit,
  » 11% of patients completed a face to face visit at UAB (Urgent Care or Prime Care) within 2 weeks*
- Top conditions treated: Upper Respiratory Infection (67%), UTI (16%), Pink Eye (7%)
- 77% patients are female
- 61% of patients are between the ages 20-39
- **48% of eMedicine patients are brand new to the UAB system**

UNIVERSITY OF CHICAGO: USING PREDICTION MODELS FOR EARLY WARNING; REAL-TIME RISK TREND
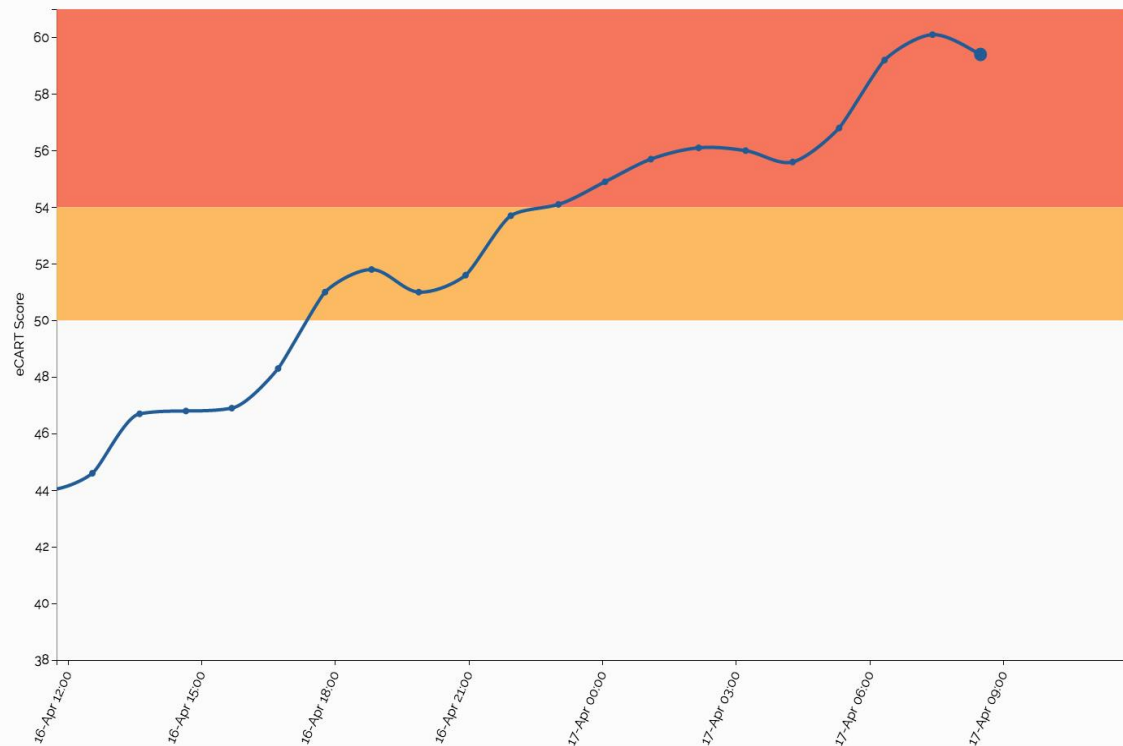
UNIVERSITY OF CHICAGO: REAL-TIME PATIENT DASHBOARD

eCART
simplifying medicine

powered by
apervita

Early Warning - Patients

Show 10 ▾ entries   Filter on risk values   [Clear filter]   Search:

Name	MRN	Age	Sex	Room	Risk	Trend	Last Updated
Smith, C	3856205762	66	M	620	● High		17-Apr-2015 13:28:44
Johnson, R	3297845295	64	M	784	● High		17-Apr-2015 13:32:01
Wilson, C	1298495234	72	M	849	● High		17-Apr-2015 13:37:54
Brown, W	3759274021	45	M	927	● Moderate		17-Apr-2015 13:34:36
Jackson, T	1485945453	60	F	594	● Moderate		17-Apr-2015 13:40:44
Miller, D	5234656234	73	M	465	● Normal		17-Apr-2015 12:42:09
Jones, M	2957304728	46	M	730	● Normal		17-Apr-2015 13:22:07
Garcia, M	2342606042	51	F	260	● Normal		17-Apr-2015 13:15:49
Thompson, D	2342366948	52	F	236	● Normal		17-Apr-2015 13:07:12
Davis, R	3596949372	44	M	694	● Normal		17-Apr-2015 13:41:17

Showing 1 to 10 of 21 entries

Previous 1 2 3 Next

UNIVERSITY OF CHICAGO: *eCART* OUTPERFORMS MEWS FOR ALL OUTCOMES
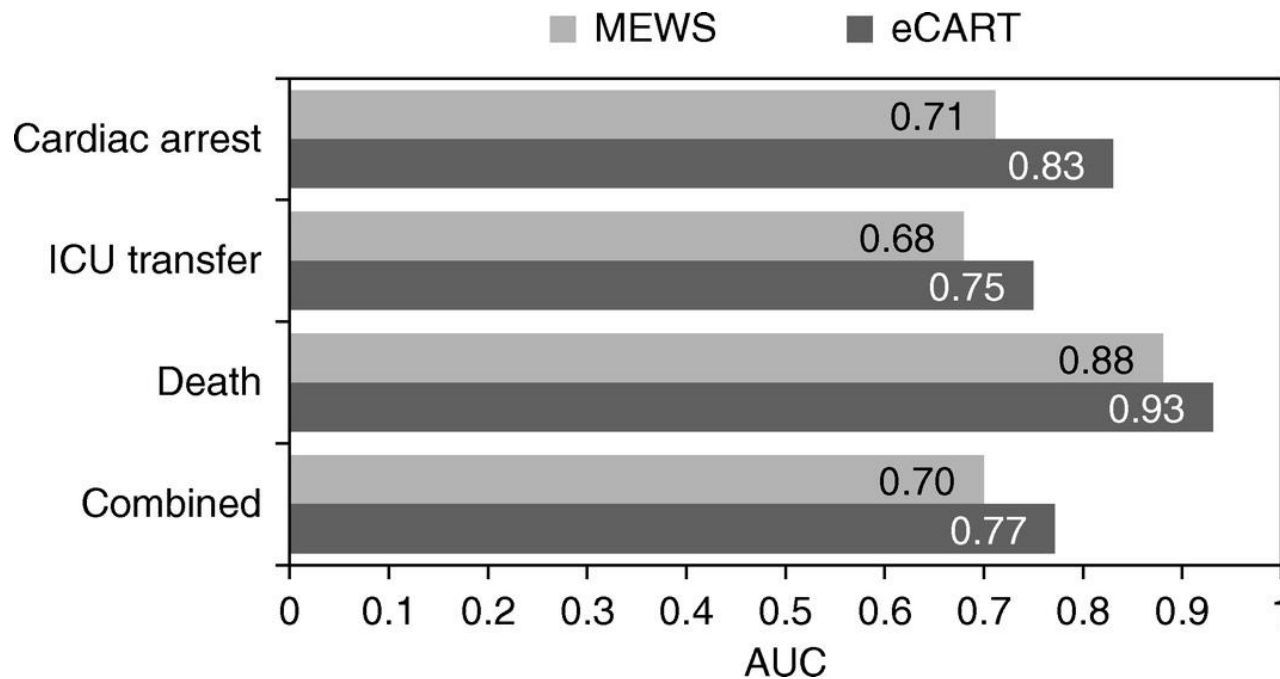
UNIVERSITY OF CHICAGO:
REAL-TIME VALIDATION OF eCART

- eCART identified 8x as many cardiac arrests and 52% more ICU transfers

- eCART trigger was met a median of 31 hr prior to the event vs 1.7 hours for the RRT
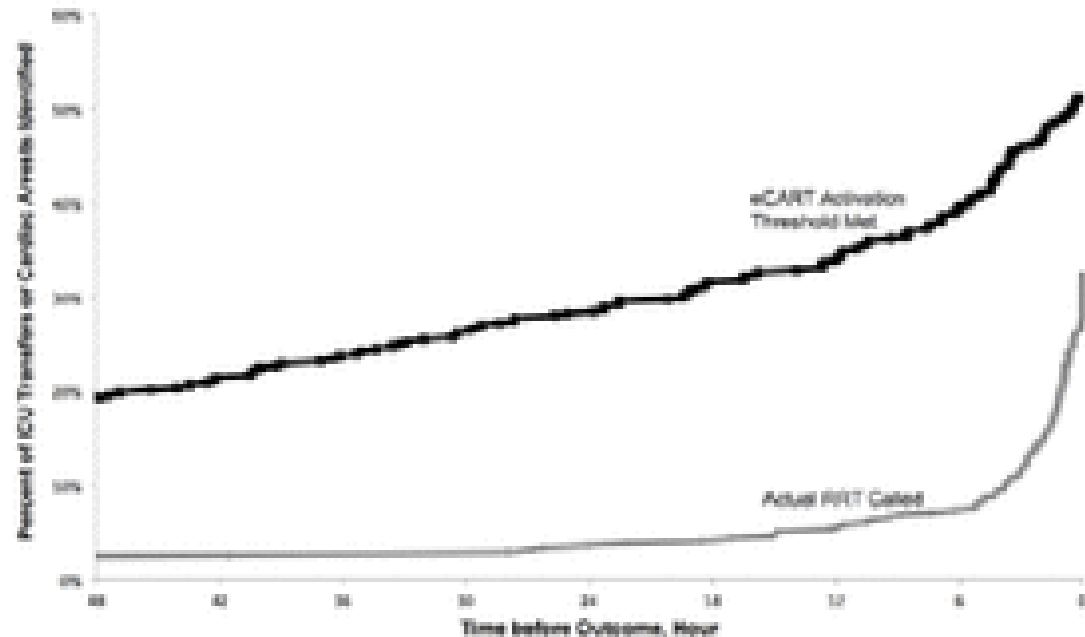
- **Predicting the need for Rapid Rescue/Cardiac Arrest**

- **Predicting Readmission**

- **Predicting which patients needs additional support**

Challenges
- **Prediction relies on timely and accurate inputs to models**
- **Models have to consider unique characteristics of the population; need to be updated regularly**
- **More important than flagging patients; What will you do differently?**

VCU SUPPORTS PATIENTS TO NAVIGATE A COMPLEX SYSTEM
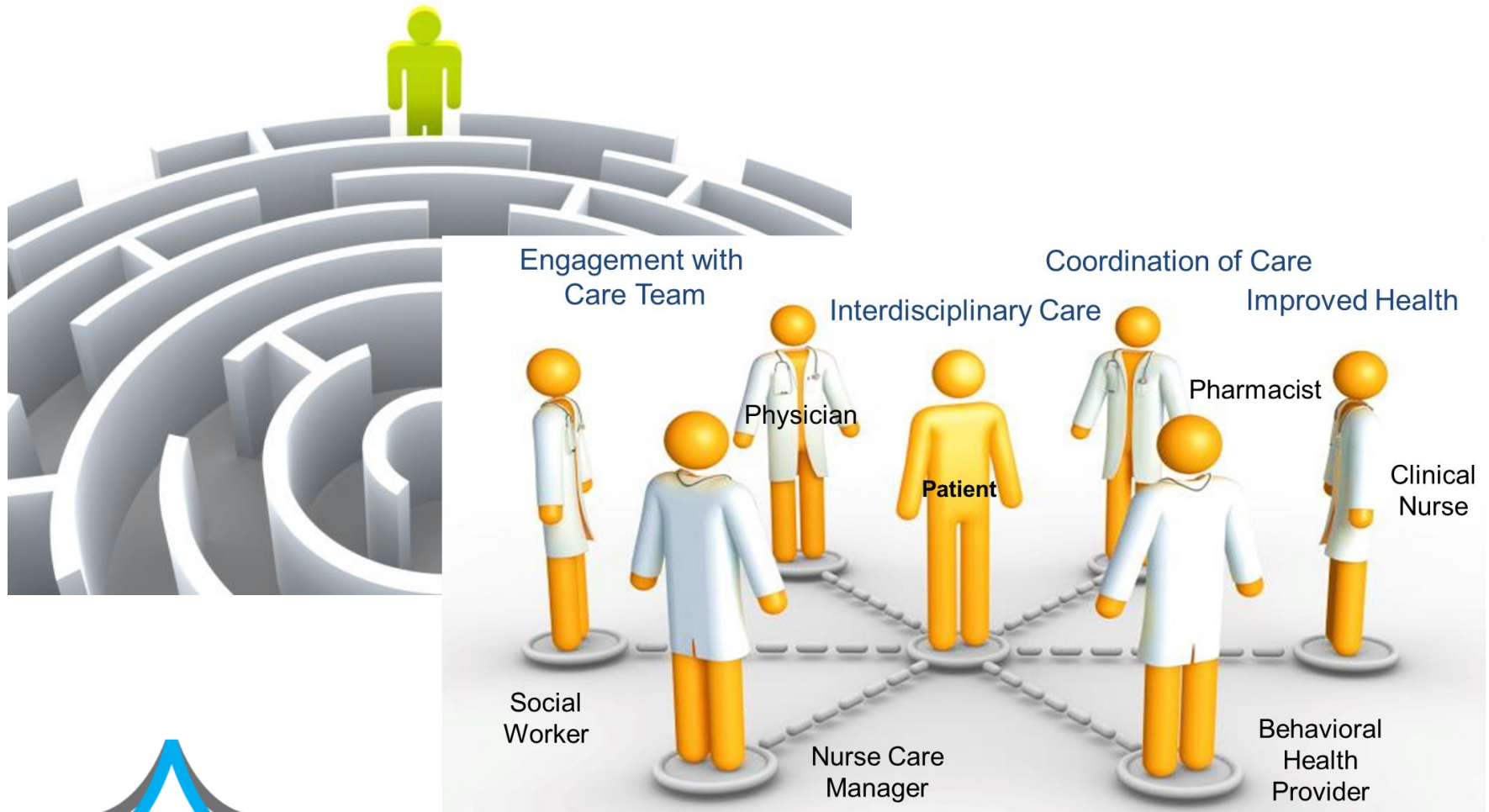
FOCUSED ON THE MOST COMPLEX PATIENTS WHO ARE "SUPERUTILIZERS"

Patients with a primary diagnosis and high utilization of services and high costs
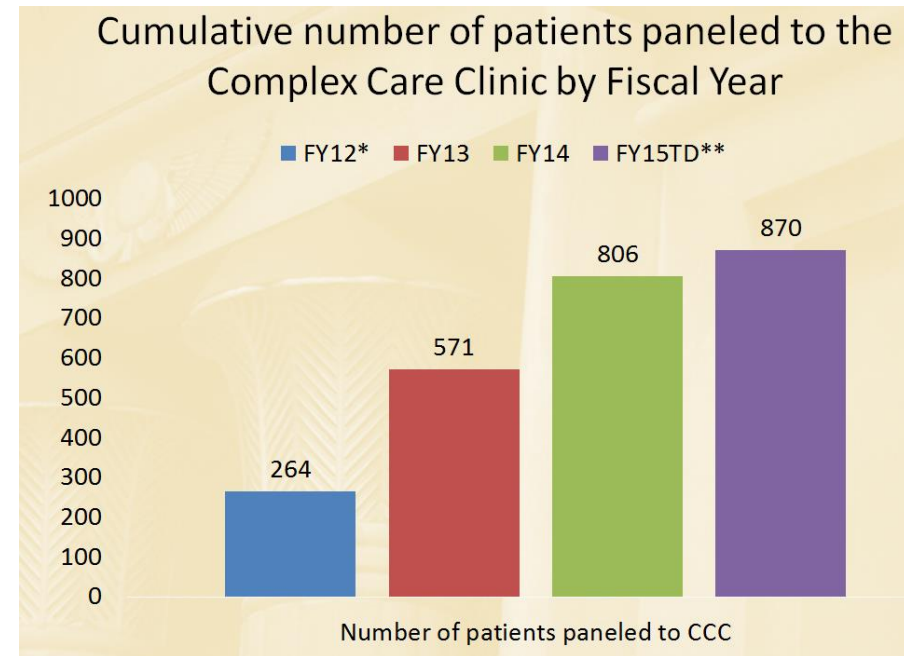
Patients with complex medical conditions and/or multiple chronic diseases

Patients with trauma, high acuity or conditions that result in costly interventions

Cumulative number of patients paneled to the Complex Care Clinic by Fiscal Year

- FY12*
- FY13
- FY14
- FY15TD**

	Value
FY12*	264
FY13	571
FY14	806
FY15TD**	870

Number of patients paneled to CCC

CARE MANAGEMENT TEAM

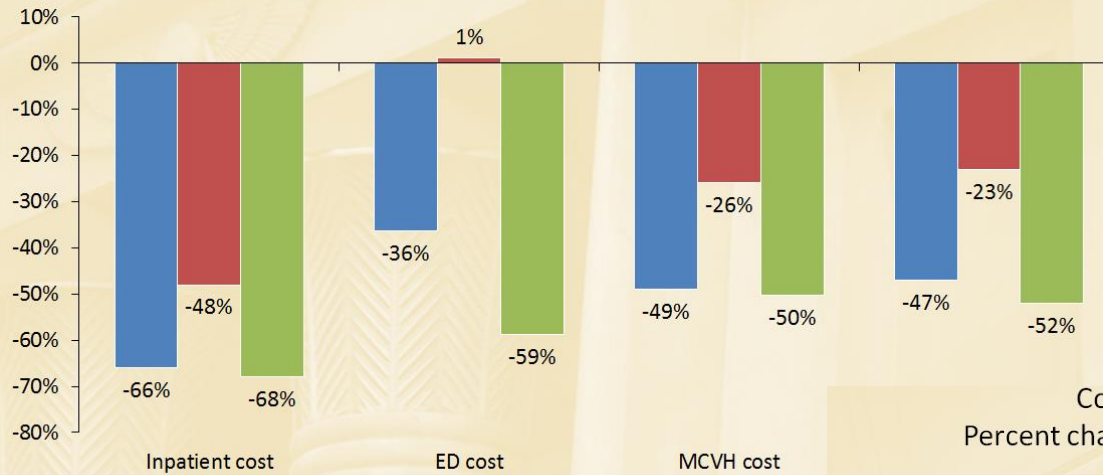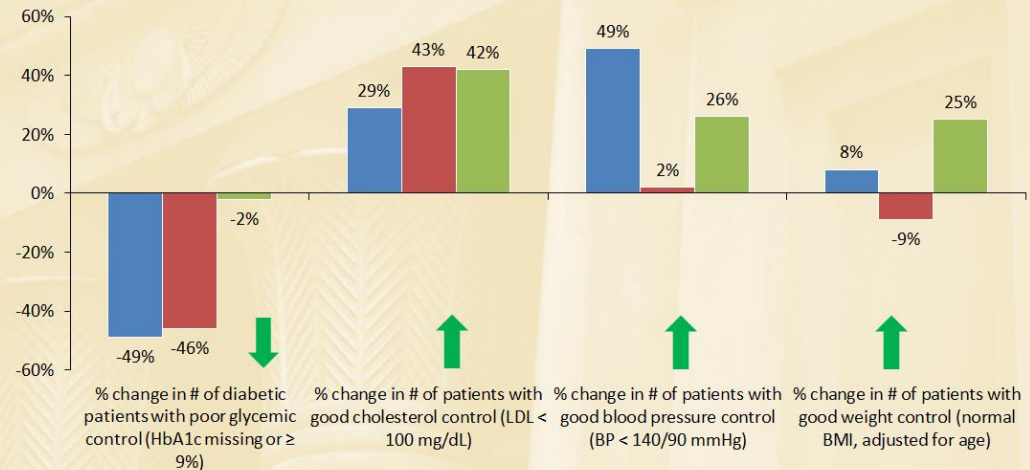| ROLES	RESPONSIBILITIES
Patient and Support System	• Identifies problems and priorities • Communicates needs to team • Engages in participation with plan • Identifies and communicates when plan and/or team are not meeting expectations
Provider	Diagnosis, treatment and management of chronic disease
Pharmacist	• Medication therapy management • Dose optimization • Monitoring for side effects & adverse reactions
Clinical Nurse	Provides education and clinical support to patients with new diagnosis of DM, CHF, COPD, Asthma and other diseases
RN Case Manager	Coordination and management of the care plan assisting the patient with navigation throughout the care continuum
Social Worker	Coordination and management of psychosocial problems, barriers, unmet needs
Outreach Worker	Assist clients/family in health education, access to health and community resources. Health coaching to promote self-management of health and social challenges.

REDUCED COST AND BETTER OUTCOMES

Complex Care Clinic Summary – Lower Cost
Percent changes in cost of care after first year in the clinic among newly engaged patients

■ Year 1 (N=365) ■ Year 2 (N=154) ■ Year 3 (N=114)*

Category	Year 1	Year 2	Year 3
Inpatient cost	-66%	-48%	-68%
ED cost	-36%	1%	-59%
MCVH cost	-49%	-26%	-50%
(fourth group)	-47%	-23%	-52%

Complex Care Clinic Summary – Better Health
Percent changes in clinical outcomes after first year in the clinic among newly engaged patients

■ Year 1 ■ Year 2 ■ Year 3*

Measure	Year 1	Year 2	Year 3
% change in # of diabetic patients with poor glycemic control (HbA1c missing or ≥ 9%)	-49%	-46%	-2%
% change in # of patients with good cholesterol control (LDL < 100 mg/dL)	29%	43%	42%
% change in # of patients with good blood pressure control (BP < 140/90 mmHg)	49%	2%	26%
% change in # of patients with good weight control (normal BMI, adjusted for age)	8%	-9%	25%

30

INNOVATIONS AND TECHNOLOGIES ON THE HORIZON
UHC MEMBER INNOVATIONS SURVEY N=51

	Strategic Focus Well/very well aligned (4-5)	Level of Activity Piloting/Impl a solution (3-4)
Patient Experience: Real-time satisfaction data collection tools that allow for immediate service recovery and care delivery enhancements. Data collection beyond existing CAHPS measures.	84% (43/51)	43% (22/51)
Referral Management: Solutions that facilitate referrals within a defined provider network, ensuring that the referral is appropriate, convenience is optimized, and the patient is well prepared for the visit.	73% (37/51)	22 43% (22/51)
Virtual Access: Web-based applications to enter information about an existing illness, quickly diagnosing low-acuity conditions and routing to the appropriate provider. Solutions complement telemedicine initiatives, creating improved patient flow and physician efficiency.	61% (31/51)	41% (21/51)

INNOVATIONS AND TECHNOLOGIES ON THE HORIZON
UHC MEMBER INNOVATIONS SURVEY N=51

	Strategic Focus Well/very well aligned (4-5)	Level of Activity Piloting/Impl a solution 3-4_
Mobile Patient Engagement: Digital technology that supports chronic disease management, allowing for communication between patients and caregivers in between scheduled visits and/or treatments.	71% (36/51)	24% (12/51)
Post-Acute Placement: Technologies that improve the process post-discharge, ensuring that patients are routed to the appropriate care setting (and the right facility) based on location and need.	78% (40/51)	33% (17/51)
Bedside Tools: Systems that leverage existing in- room technology (e.g. televisions and mobile devices) to engage inpatients in their care by providing educational resources, access to dining services, and a means for providing feedback to caregivers.	66% (34/51)	39% (20/51)

HOW BEST TO THINK ABOUT THE FUTURE?

The point is not to predict the future but to prepare for it and to shape it

- No ONE answer to the question
- Not just simply extrapolating current trends
- Contemplate the drivers of change
- Use the drivers to imagine different scenarios of the future
- Extrapolate future scenarios to think about what to do
- Now prepare; It is a marathon not a sprint

People consistently overestimate the effect of short term change and underestimate the effect of long term change"

Ian Morrison, former president of the Institute for the Future