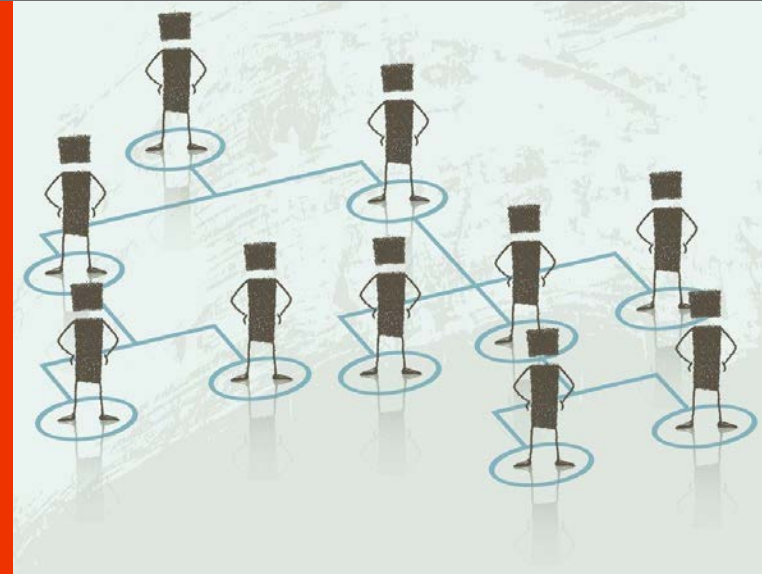


# Organizational Competencies in Informatics & Analytics for High Performing Health Systems



Perspectives of CEOs from UHC  
Quality Leadership Award Winners:  
A Research Summary

January 2015

# Executive Summary



The academic medical center (AMC) of the future is taking shape market by market, and health system by health system according to CEOs from UHC's Quality Leadership Award Winners. Long recognized as high performing health systems, UHC Quality Leadership Award winners have helped define industry quality and safety best practice since the landmark UHC Quality and Accountability Study in 2005. Senior leaders from 2014 and 2013 winners interviewed for this research indicate enterprise response to healthcare reform and changing market conditions is resulting in a complex array of transformational strategies, organization structures and operating models. AMCs are participating in the development of large integrated delivery networks formed from vertical and horizontal consolidation, sometimes as the centerpiece (hub) and sometimes as a local market presence (spoke). Integration, both clinically and with the medical school, is the key strategy for many. Others are forming multi-entity alliances to create accountable care organizations, develop shared infrastructure and offer economies of scale to employers and payors. Additional approaches range from developing international presence to creating partnerships with retail, life sciences, technology vendors, medical device companies, and payors.

While the specific transformation strategies differ, most agree that high performing AMCs in the future will be part of accountable, connected systems that promote health and provide population based care. Compliance driven reform will be balanced with the specifics of each market. Critical to the development of future business models will be movement beyond dependency on legacy information systems to include intelligent tools that focus on the problem to be solved, are agile and customizable to the hub, spoke and network, and provide real time, prescriptive and predictive information for decision making. A "generational change" is taking place one executive explained, and most agree that new Informatics and Analytics leadership and organizational competencies will be necessary to make the transition from volume driven to consumer centered, value focused care. Traditional organizational structure and operating models in Information Technology and Quality are changing to support new strategies and market demands.

This Research Summary provides a synopsis of emerging organization competencies and leadership models, identifies five key themes from the leadership interviews, pinpoints differences in UHC and other IDN leadership interviews conducted during previous research and explores the relationship between excellence in quality of care and the existence of mature Informatics & Analytics functions. Quotes from participants are highlighted throughout the summary. While key strategies and organization competency development is still a work in progress, the UHC members have made it clear, the future is being designed today, intentionally by some and reactively by others.

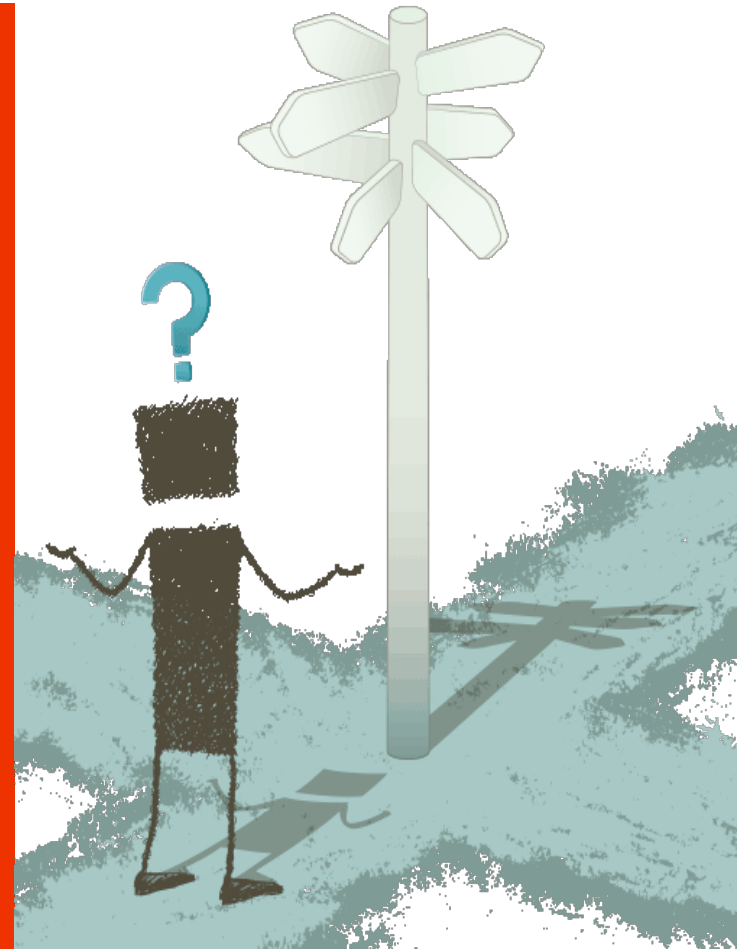
A handwritten signature in black ink that reads "Pam W Arlotto".

Pam W. Arlotto  
President & CEO  
Maestro Strategies

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# About the Research

The University HealthSystem Consortium (UHC) has a strong history of providing members with robust data and analytics, and insights for clinical and operational improvements. Annually, UHC recognizes members that demonstrate excellence in delivering high performance in quality and safety. The award is based on the 2005 Quality and Accountability study which identified five key organizational characteristics including:

- A shared sense of purpose
- Hands-on leadership style
- Vertical and horizontal accountability
- A focus on results
- Collaboration

In an effort to understand emerging organizational competencies in Informatics & Analytics and the impact of these capabilities on performance improvement, twelve UHC member CEOs from 2013 and 2014 Quality Leadership Award winners were interviewed regarding their experiences. During the conversations, evolving leadership roles, organization structures, challenges, and predictions for the next few years were discussed. Additionally, the evolution of collaborative working relationships with Information Technology and Quality as well as new operating models were explored. Findings were compared to research conducted at over 40 leading Integrated Delivery Networks regarding future leadership and organizational competencies required to move from the implementation of EHRs, to harvesting the information from advanced information systems to transforming care using health intelligence and innovative technologies.

The findings and a summary of this brief were presented at the UHC Member Board of Directors Annual Meeting on January 29, 2015.

# Research Participants: 2013 & 2014 UHC Quality Leadership Award Winners

**Bernard Birnbaum MD**  
CEO  
NYU Langone Medical Center  
New York, NY

**Marc Boom**  
President & CEO  
Houston Methodist Hospital  
Houston, TX

**John Brumsted MD**  
President & CEO  
Fletcher Allen Health Care  
Burlington, VT

**Peter Butler**  
CEO  
Rush University Medical Center  
Chicago, IL

**Shane Cerone**  
President & CEO  
Beaumont Hospital, Royal Oak  
Royal Oak, MI

**Craig Cordola**  
CEO  
Memorial Hermann Hospital  
Houston, TX

**David Entwistle**  
CEO  
University of Utah Health Care  
Salt Lake City, UT

**John Fox**  
President & CEO  
Emory University Hospital  
Atlanta, GA

**Peter Geier**  
CEO  
The Ohio State University Health System  
Columbus, OH

**Bob Page**  
President & CEO  
The University of Kansas Hospital Authority  
Kansas City, KS

**Mitchell Wasden**  
CEO/COO  
University of Missouri University Hospital  
Columbia, MO

**Robert Wyllie MD**  
CMOO  
The Cleveland Clinic  
Cleveland, OH

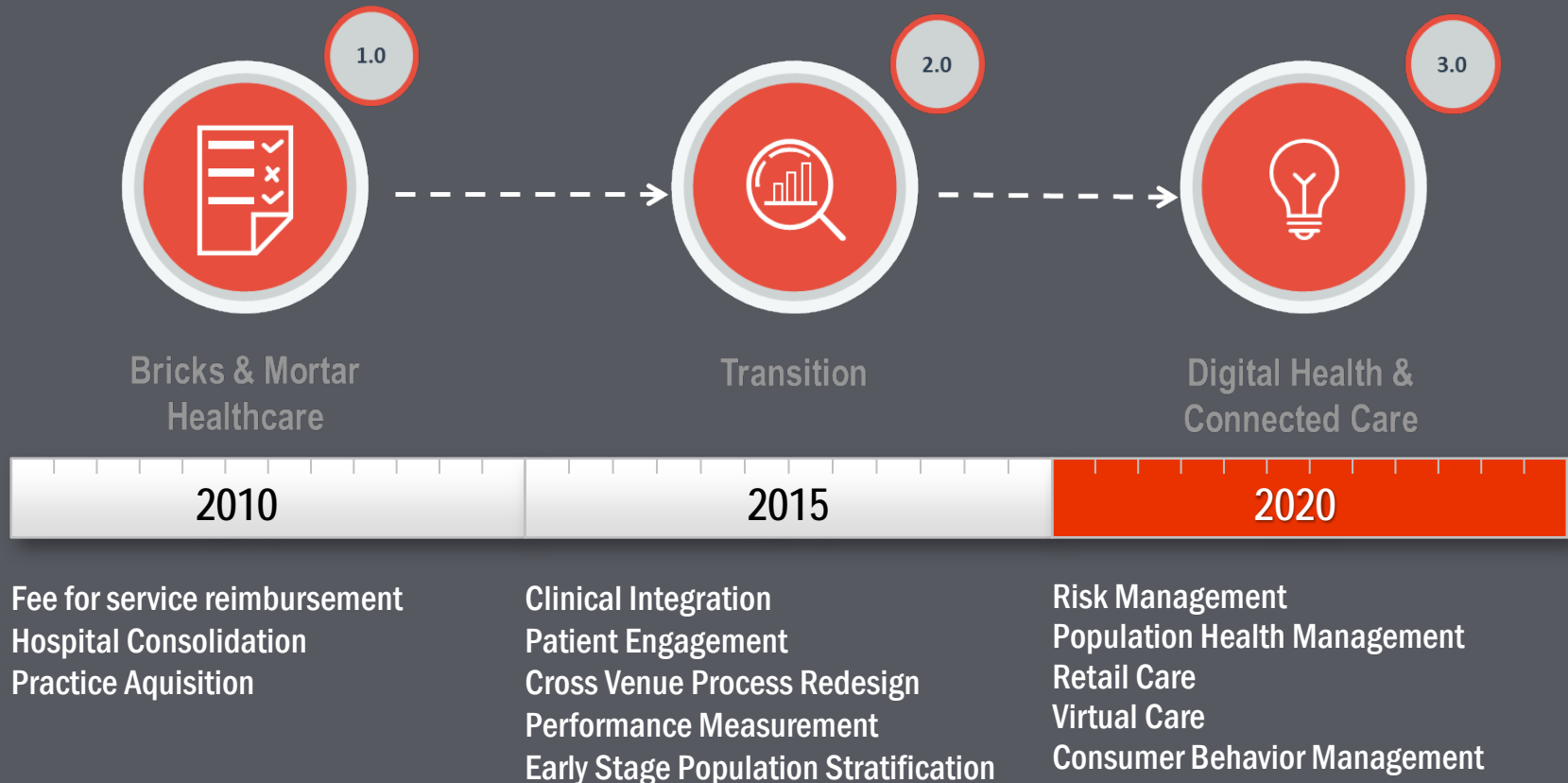
# Research Objectives



## The objectives for the research were to:

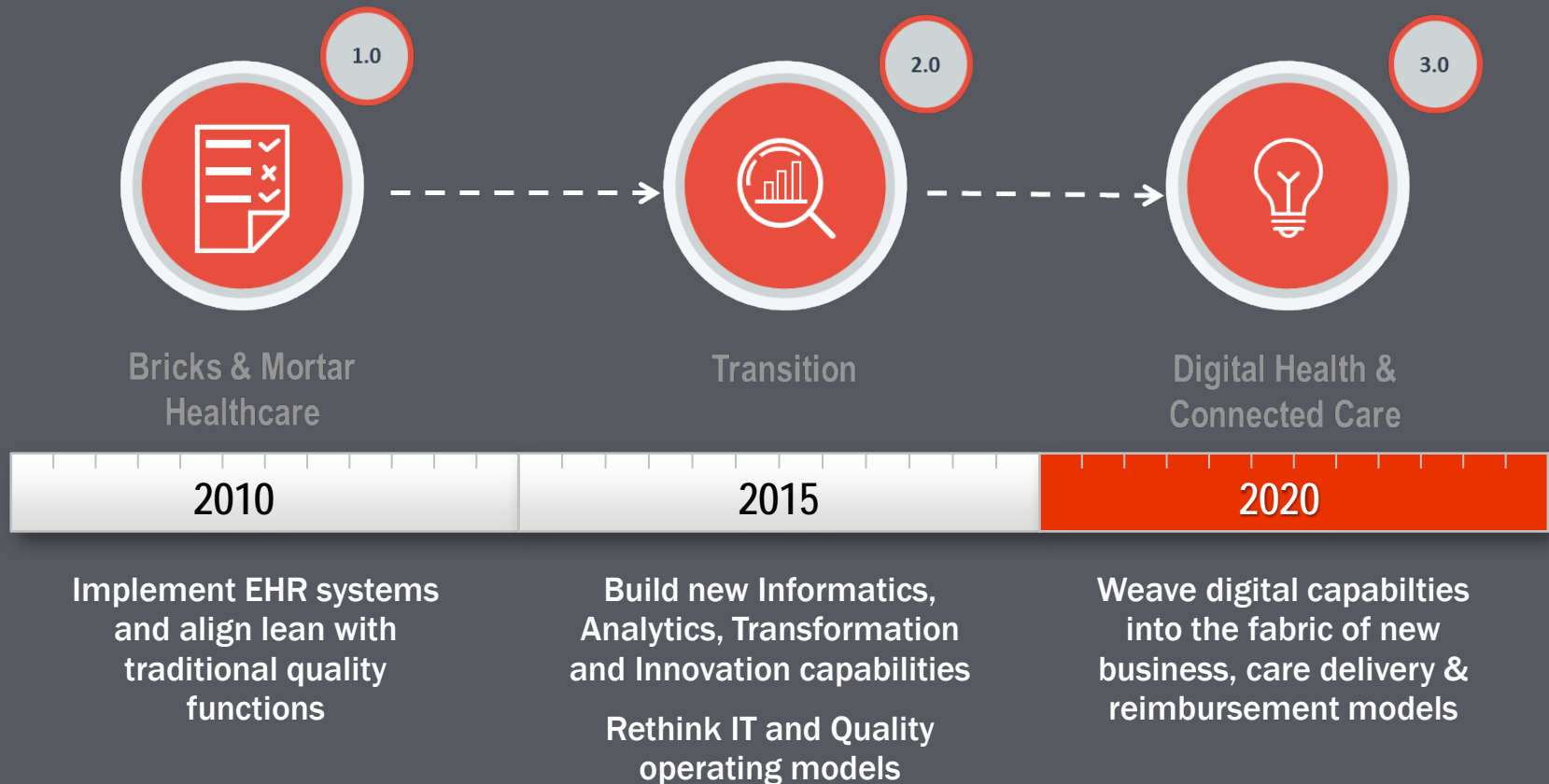
- Understand key organizational capabilities and operating models for Informatics & Analytics at UHC Quality Leadership Award Winners, as well as implications for Information Technology and Quality in the future
- Determine similarities and differences in these trends at UHC members as compared to research conducted at other leading health systems
- Determine if there is a relationship between excellence in high quality care and emerging Informatics & Analytics models

# Transformation Framework – Enterprise Strategy



***Enterprise focus during the transition from volume to value varies by market  
Some say the timeline is “too fast” - others “too slow”, but all agree the stages are additive  
Level of Integration progresses from 1.0 to 3.0***

# Transformation Framework – Health Informatics & Analytics



***“The future will be about getting the right information to the right person at the right time to make the right decision to create value”***



# Value Driven Information & Technology Enables Strategic Priorities

## Strategic Priorities Requiring New Capabilities:

- Improving cost management & efficiency
- Increasing clinical integration
- Expanding coordination of care
- Improving quality and safety
- Innovating and change management
- Increasing patient engagement

*Source: AHA Series: Building a Leadership Team for the Healthcare Organization of the Future, 2014*

## Capabilities Available from Value Driven HIT:

- Hardwire standardized care practices and protocols
- Improve point of care decision making through clinical decision support and intelligent algorithms
- Stratify patients with specific conditions and track disease status
- Improve access and care management across geographic and time differences
- Integrate data across multiple entities, processes and functions
- Improve communications across care teams & transitions of care
- Measure and analyze performance of care for individuals and populations
- Make lean and performance improvement sustainable, by automating routine work, eliminating waste and reducing cost of care

*Source: Adapted from Davenport, Process Innovation: Reengineering Work Through Information Technology*

***“As we move from a holding company to an operating company, the information technology platform will drive standardization and localization”***

# Five Emerging Themes

1. Position the CEO as “Transformer in Chief”
2. Recognize the Virtuous Cycle
3. Build Capabilities in Informatics and Analytics
4. Prepare for Convergence with New Operating Models in IT and Quality
5. Develop a New Investment Strategy



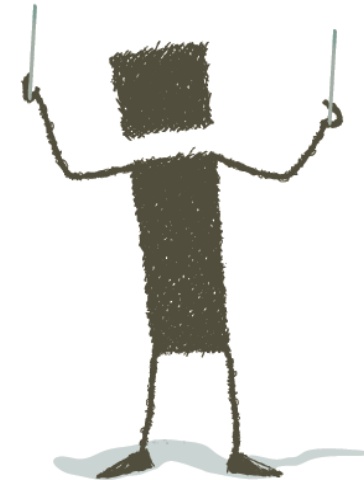
These 5 themes are consistent across UHC interviews and previous research conducted at 40 leading IDNs.

# Position the CEO as “Transformer in Chief”



The high performing AMC CEO:

- Sets the Vision for the high performing health system of the future
- Understands the future will be a combination of “bricks & clicks”
- Sees technology as an enabler and information informed processes as a differentiator
- Is energized by the opportunity to innovate and reinvent business models
- Challenges the entire health system leadership team to look for ways to improve performance
- Is not waiting on the rest of the industry to define emerging practice
- Recognizes the CEO must lead, mentor and participate in transformation



*“We have to re-envision the patient experience. I believe our future relationship with the consumer will drive transformation further than payment reform”*

*“Most people would be surprised how much time we (and I as the CEO) spend on preventing harm”*

# Position the CEO as “Transformer in Chief”



- Most importantly, builds a new culture of change, whose attributes within each stage include:

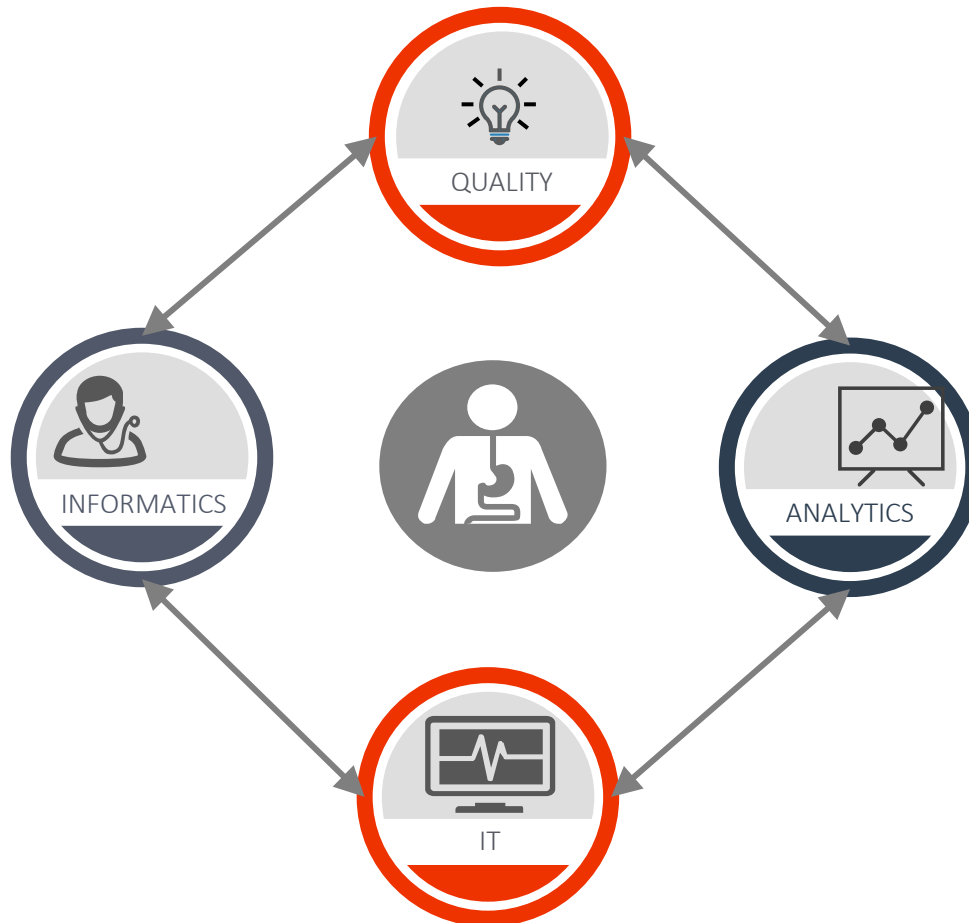


- Disruptive Change
  - 2.0: Best Practice Evolves to Emerging Practice
  - 3.0: New Business Models
- Collaborative Change
  - 2.0: Dyads, Triads, Dotted Lines
  - 3.0: Partnerships
- Experimental Change
  - 2.0: Proof of Concept, Agile, Fail Fast
  - 3.0: Scale What Works

*“In healthcare, we take a process that requires 40 steps and improve it so it only takes 37 steps. We need more creative disruption. While technology can impact innovation, we can’t just layer it in – that only adds complexity. We need a more systemic approach to change – to conceive of more elegant ways to deliver value and then destroy our current system.*

*Transformation occurs through simplification, engaging patients and clinicians in new and different ways, getting down to the essence of the value”.*

# Recognize the Virtuous Cycle



*“There is a virtuous cycle created by having the foundational IT systems in place, applying health informatics skills to help make the systems ‘smart’, building analytics capabilities to inform decision making and partnering with quality to drive performance improvement and transformed care processes.”*

# Recognize the Virtuous Cycle

While no “perfect” leadership structure or operating model is in place, a number of patterns emerged from the research. There is a need to:

- Formalize the strategy and role of Health Informatics and Analytics
- Rethink the traditional scope of IT and Quality
- Design organizations and methodologies to:
  - Leverage clinical leadership of the information and performance improvement functions
  - Ensure accountability for value creation and realization

*“Chief Health Information Officers (or teams who fit that role) are needed to ensure we harvest information to improve performance, support population health, and drive the transformation of the healthcare business model”*

*“You must create a ‘gold standard’ of data definitions to build ‘trust’”*



*“We haven’t realized the value of our investment in EHRs and other HIT systems”*

*“We need to invest in the people, process, change and information to drive value”*

*“In the future, we will transition from IT as a department in the AMC to regional/national IT services centers”*

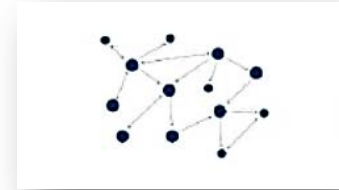
# Build Capabilities in Informatics and Analytics



## Frequent 1.0 Challenges

### Decentralized Operating Model

No alignment or standardization of people, process, data integrity and use, technology, information policies, etc



## Health Informatics

- Focused on Acute Care EHR Adoption only
- Organizational uncertainty regarding the role, value and purpose of informatics, and distinction from IT
- Meaningful Use Compliance drives “check-the-box” implementations to ensure incentive payment
- Unclear or nonexistent priorities and budgetary constraints
- Tactical customization and optimization requests
- Fragmented informatics resources working across multiple silos without common purpose
- Inconsistent approaches to designing workflows, developing clinical content, educating and supporting clinicians and managing change
- CMIOs are inexperienced at the strategic level; C-Suite business practices are often foreign and the natural tendency to be drawn into tactical issues is difficult to overcome

## Decision Support & Analytics

- Departmental, functional and entity specific “point systems” and resources
- Inconsistent data definitions creates lack of trust in shared information
- Resource intensive data collection, storage, integration, manipulation, analysis, presentation and reporting
- Unique information requirements of clinical, financial, operational, marketing, quality, risk management, research, inpatient, ambulatory, etc. reporting
- Limited experience with integrated data or knowing what questions to ask
- Inadequate patient or consumer centric information repositories, and attribution capabilities
- Need for real time information at the point of care
- Increasing numbers of scorecards, regulatory reporting requirements, national benchmarking and ranking groups

*“I am currently recruiting a strategic CMIO to help leverage our investment in our electronic health record and analytic tools”*

# Build Capabilities in Informatics and Analytics



## 2.0 is More Strategic

### Health Informatics

- Transition from focus on EHR adoption and implementation to:
  - Creation of “Smart” EHRs through Clinical Content Design
  - Harvesting value from information, analytics and communication technologies
  - People, process and information interaction with technology rather than technology implementation
- Expand beyond acute care to focus on the entire system of care – from clinical informatics to health informatics
- CMIO/CHIO serves as accountable member of executive team to synchronize information strategy with:
  - Emerging clinical and business strategies
  - Plans for clinician change and reduction of practice variation
  - Preparation for population based health and consumer engagement

### Analytics

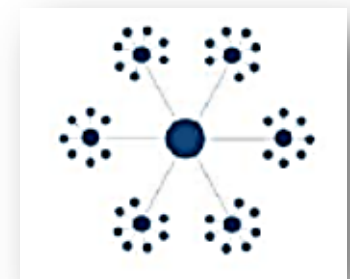
- Transition from point solutions to integrated, enterprise data warehouse(s) and tools
- Create data governance and stewardship practices to ensure common data definitions across the enterprise
- Explore information driven decision making methods, tools and approaches
- Experiment, learn to analyze data differently
- Determine level of centralization versus self service

### Hub and Spoke Operating Models

- Hub - Corporate Standards, Centers of Excellence and Governance
- Spoke – “Localization” v “Customization”



### Daisy – Multi-Entity and Complex Organizations



The move from 1.0 to 2.0 requires a significant leadership “pivot” and investment in development of organization capabilities. The move to 3.0 is more evolutionary



## Frequent 1.0 Challenges



### Information Technology

- Acute care focus, limited experience across the “system of care”
- Command and control decision making processes
- Vendor or third party driven implementations have resulted in limited internal knowledge base
- Existing IT investment has not been leveraged, limited value realization

*“It’s dangerous to cede the decisions around procuring and implementing applications just to CIO and IS gurus. All of senior management needs to be very savvy regarding where we are making investments, functionality and how we derive value”*

### Quality and Performance Improvement

- Duplication of effort across multiple improvement groups
- Difficult to “hardwire” process redesign, lean improvements and quality standards into order sets and EHR workflows
- Focus on “abstraction” versus “extraction”
- Increasing numbers of external agencies, associations and benchmarking groups requiring data collection and reporting
- Challenges of “getting information out of our systems” to use in performance improvement

*“One of our greatest challenges is repurposing information for different groups, finance, patient care, marketing, research, external agencies....we are building our data governance group as we speak”*

# Prepare for Convergence with IT and Quality



## 2.0 is More Strategic

### Information Technology

- Centralized to build economies of scale
- Expands to include deployment of Care Management Systems and ACO enabling technologies
- Transitions operations from hospital IT department to multi-entity shared services provider
- Shifts focus to:
  - Reducing complexity, rationalizing cost and virtualizing delivery of systems
  - Ensuring cyber security, system performance and technical standards
  - Orchestrating multiple platforms and service delivery partners
  - Rapidly integrating new acquisitions, relationships and partners
  - Consulting with operational and clinical leaders to integrate targeted SaaS & Cloud based technology, mhealth, social media and other digital innovations

### Quality and Performance Improvement

- Expands consistent and coordinated use of registries for population health management
- Applies decision support and analytics tools to stratify problems to solve, design improved processes and improve performance
- Plans for and deploys performance improvement skills, data, knowledge and capabilities to the frontline
- Engages consumers and patients to improve processes
- Shifts from retrospective analysis to real time, point of care decision making enablement
- Moves from incremental improvement to process redesign and business model transformation

*“Traditional benchmarking will continue to be important, but sometimes the metrics limit us. They measure the traditional business model. How can we measure ‘emerging practice’?”*

# Develop a New Investment Strategy



## Strategic Investment Portfolio



### Run the Traditional Business

- Support of existing “volume” driven enterprises
- Explore cost reduction and rationalization, simplify complex structures, apply lean thinking to IT and quality reporting

### Foundational

- “Smart” or 2.0 EHRs enabled with Clinical Content
- Design of Care Management and Consumer Self Service Platforms & Tools
- Organizational Competencies in Informatics, Analytics, Transformation & Innovation
- Build EDW, data governance and Business Intelligence tools/methods

### Short Term ROI

- Analytics driven improvement projects targeting specific outcomes improvement and cost reductions
- Proof of Concept projects help leadership learn and skills evolve
- ROI provides funding for next projects

### Disruptive

- New business models driven by digital innovations, design thinking, data and experimentation
- Holistic, systemic design of care processes and practices
- Virtual community sharing of emerging practices and transformation methods

# UHC Member Differences\*

## Health Analytics and Business Intelligence:

- 3.0 members
  - Have greater experience with first generation healthcare data warehouses (10+ years)
  - Longer track record with the practice of Data Governance and Stewardship
  - Are in early stages of predictive and prescriptive analytics

## Performance Improvement and Quality Reporting:

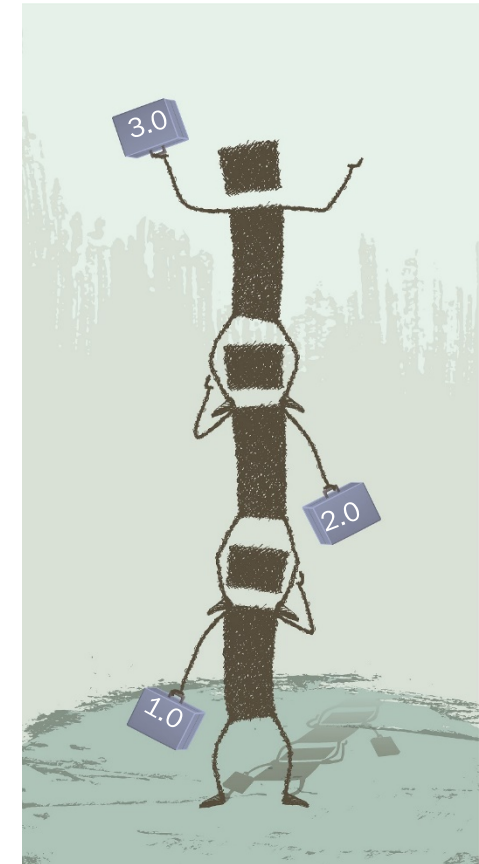
- More maturity in Quality measurement, turning insights into action at participating UHC members

## Leadership:

- Shared impression that UHC members should lead the transformation, ahead of payers, large health systems, suppliers, etc.
- Historically have “grown their own”, rarely recruit new leaders for informatics, analytics and transformation, has been evolutionary
- Rare to find titles such as Chief Innovation Officer or Chief Transformation Officer as often seen in large IDNs
- Innovation and experimentation is a more natural part of AMC DNA – shared by C-Suite and other leaders

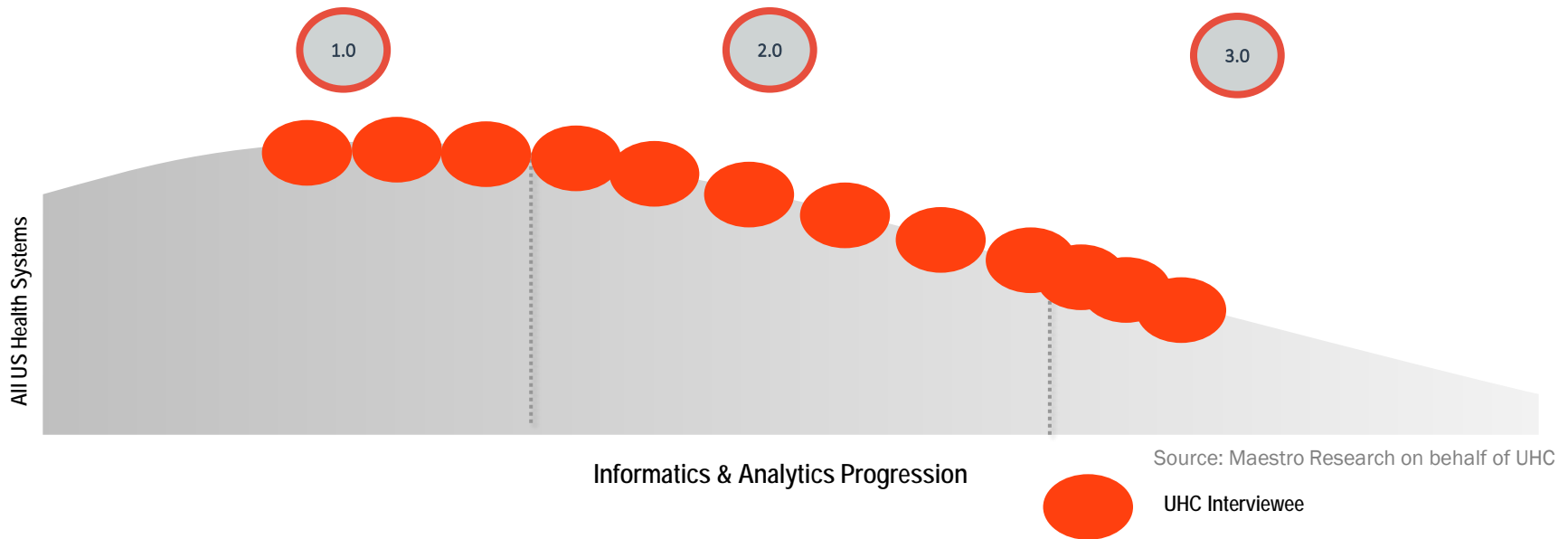
## Influence of Research and Academia:

- University settings have access to incubators, accelerators, institutes, and researchers which influence health system leadership
- Research is evolving to include care delivery and business model design
- Research Informatics is converging with Health Informatics, shared learning, leadership and governance



*\*Differences are compared to previous research completed on behalf of Froedtert Health & CHRISTUS Health with 40 IDNs in the Spring of 2014*

# Are High Performing UHC Members More Advanced in Informatics & Analytics?



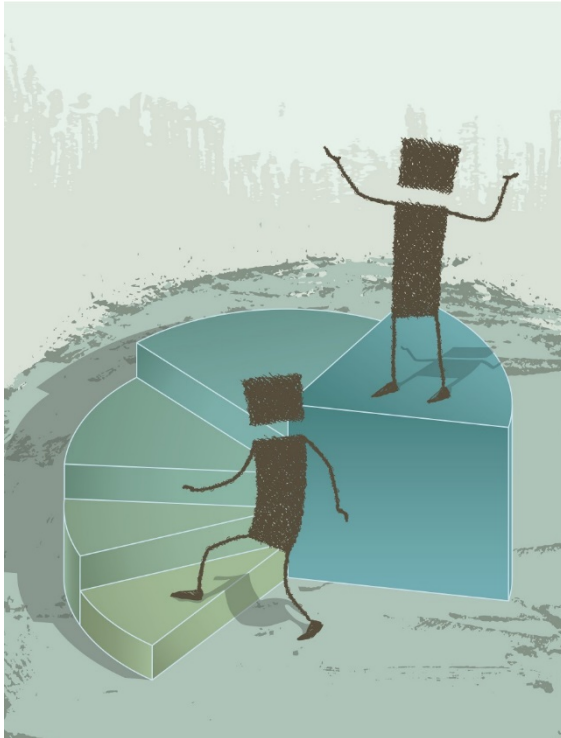
## Participants included:

- 12 UHC members and systems representing a total of 58 hospitals and 17658 beds
- 9 EPIC sites and 3 Cerner sites
- 2 HIMSS EMRAM Adoption Level 7 and 7 EMRAM Level 6 recipients
- 7 had one common enterprise data warehouse for financials and clinicals
- Focused analytics applications: 8 in clinical analytics, 12 in financial analytics

## Explanation of Ranking – Informatics & Analytics progression based on the following:

- 1.0 Informatics still primarily focused on adoption, may have acquired analytics tools but not yet building organizational capabilities
- 2.0 Building organizational capabilities in Informatics & Analytics
- 3.0 Convergence between Informatics, Analytics & Quality/Performance Improvement

# Summary – Quality Award Winner Perspectives



- Quality Award winners are at different stages in the development of enterprise strategies and organizational capabilities to support the transition to value based care
- Most agree that competencies in Informatics & Analytics will be essential in the future and must be built; some organizations are further along in that process
- The more strategically integrated the health system is with the medical school and community providers, the higher the demand for the advanced use of Informatics & Analytics
- Quality Award winners are intentional in their approach to using internal and external measures. In addition to fully committing to external measures such as UHC, internal measures are aligned with strategy, organization structure and desired outcomes
- The definition of success is changing; how success is measured will also change over time
- Most feel there is much work to do to leverage existing investments in information and technology, by creating “smart” systems, hardwiring quality goals and using information to design new processes and care delivery models

*“In academic healthcare, we have historically focused research on esoteric innovations which is about 5% of the opportunity and we were ignoring the 80-90% of health services that would transform access, quality and cost but we kept doing them the same old way. Let’s reinvent that. We need a culture of yes – care, deliver, innovate and serve”*

## About Maestro Strategies

Maestro Strategies has orchestrated systemic change within the healthcare industry for more than a quarter century. By combining strategic and operational insight with deep understanding of advanced information technologies and analytic tools, Maestro Strategies helps healthcare organizations execute strategic priorities and accelerate value creation. We work with our clients transition to the patient-centered, connected, next-generation enterprise by ensuring that investments in strategic business plans; informatics, analytics and technology; progressive governance and decision-making approaches; and organization and process redesign are all leveraged for value creation. Founded by Pam Arlotto, a former national president of HIMSS, the firm has a long track record working with prominent healthcare systems nationally. For more information contact: [insights@maestrostrategies.com](mailto:insights@maestrostrategies.com) | 770-587-3133x105