Beyond the EHR: Mobility, Patient Engagement, eCommerce and Analytics

Judy Murphy, RN, FACMI, FHIMSS, FAAN
Chief Nursing Officer & Director
IBM Global Business Services Healthcare
What we will cover:

- Today’s healthcare landscape – what is changing and why we need to change too
- Leveraging Health IT beyond the HER
- Reimagining Healthcare with Mobile
- The Power of Patient Engagement
- Emerging Consumerism and eCommerce
- Analytics and Pop Health:
  - Data into insights to drive business and care outcomes
  - Knowledge-driven and data-driven methods
  - Cognitive computing – role of Watson
Healthcare transformation is happening, driven by fundamental shifts in expectations and critical drivers

**Expectations** for better quality, value and outcomes

**Escalating incidence and cost of chronic disease**

**Changing demographics and lifestyles**

**Globalization of health care**

**Critical resource shortages**

**Increased competition and new entrants**

**Advances in technologies and treatments**
This transformation is an evolution ….to a new model for healthcare

**Old Healthcare**
- Fee for service
- Volume
- Delivery
- Employer-centric
- Prices unknown
- One way dialogue
- Transactional
- Data poor & disconnected
- Reactive
- Standards

**New Healthcare**
- Pay for performance
- Value
- Quality Outcome
- Consumer-centric
- Cost transparency
- Engaged & mobile
- Brand loyal
- Integrated rich “big” data
- Predictive & prescriptive
- Personalized & optimized
Healthcare is moving to a system focused on value, coordinated around the individual and integrated into our communities

Focus is on **value**, **coordinated** around the individual and integrated into communities

Emphasis is on **proactive care** to meet health needs

Payment will be based on **value** and **outcomes**

Care is **standardized** according to **evidence-based** guidelines

We measure **quality** and make rapid changes to improve it

**Knowledge** is translated into practice quickly
The new model is Value Based Care - centered around the patient

Value = \frac{Experience}{Cost}

Organizations are on a journey to improve value

Taking steps to achieve better results, and improve customer (patient) satisfaction

Reducing waste, reducing errors, managing risk, and improving efficiency
Much new data and revised systems of engagement - *delivered via mobile, the web and the cloud* - ensure acceleration of change
And made more urgent by an escalating volume of healthcare data

Source: IBM Global Technology Outlook - 2012
Healthcare Solution Focus for IT

OPTIMIZE
Health System Performance & Optimization

ANALYZE
Population Health Insights & Care Management

ENGAGE
Individual Insights & Engagement
Transforming Health and Healthcare
Leveraging health IT beyond the EHR

Tapping into & Shaping the Expanding Consumer Marketplace
- Customer centricity
- Personalization
- Consumer engagement
- CRM
- Choice
- I-Experience
- E-commerce
- Cost transparency
- Customer loyalty
- Branding
- Loyalty

Building the Care Team of the Future
- Care planning support
- Efficiency & logistics
- Demand management
- Quality improvement
- Team coordination
- Secure (& remote) communications
- Reducing HAI
- Fewer readmissions
- Cost reduction
- Workflow design
- Monitoring
- Optimized processes
- Decision support
- Employee satisfaction
- Customer satisfaction

Managing Populations for Continuous Improvement
- Outcome measurement
- Quality measurement
- ROI
- Cohort analysis
- Patient similarity analysis
- Risk assessment
- Cost prediction
- Chronic disease management
- Proactive intervention
- Case management
- Wellness / fitness
- Education
- Incentives
- Gamification

Optimizing & Securing the Healthcare Value Chain
- ERP solutions
- Clinical & financial data integration
- Supply chain optimization
- Complying with new drug safety / security requirements
- Workforce planning & optimization

Requires: Integrated Data, Powerful Analytics, Cloud Computing, Security Systems and Mobility
Mobile is being exploited to:

- Facilitate anytime anywhere access to data and extend services beyond traditional settings
- Develop new engagement techniques and health strategies with patients and consumers
- Gain insights to provide more personalized, proactive interventions; bring analytics to the point of care
Reimagining Healthcare
Healthcare must become as relevant as their own social networks

“Know me”
Capture and incorporate preferences
- What’s my history?
- What are my preferences?
- How will I respond?
- What will motivate me?
- Respect my privacy

“Engage me”
Personalize offerings and services
- Engage in the preferred dialog
- Be relevant (“right information”)
- Be consistent across touch points
- Show sincerity -- “you care”

“Empower me”
Innovate to deliver quality, convenience and total experience
- Give me the information I need
- Connect me with relevant communities
- Simplify control and access
- Enable action and convenience
New business models for delivering care are emerging, providing people with more “choice”
So what is driving “consumerism” in healthcare?

• Cost shifting – “out of pocket” costs are increasing for individual healthcare consumers

• There is an increase in the use of High Deductible plans and Health Savings Accounts (HSAs), leading to more consumer price sensitivity

Source: Healthcare Payer News, May 2014
Health Plan Engagement App Demo
End-to-End integration
- Data access
- Integrated patient data

Workflow and user interface
- Right information, right time, place, access

Analytics and big data
- Population analytics
- Unstructured information / NLP
What is the optimal treatment based on the latest literature for my patient’s clinical profile?

Why is this the best protocol?

Basic Reporting

- What happened?
- When and where?
- How much?

Foundational Analytics

- Who is at risk?
- What is happening?
- How can we improve?
- What is the Right Data?
- What actions to take?

Predictive & Prescriptive

- What will happen?
- How can we pre-empt?
- What is the likely outcome? Who would be best at managing this patient?
- What is the expected response to potential medications?

Cognitive

- What is the optimal treatment based on the latest literature for my patient’s clinical profile?
- Why is this the best protocol?

Retrospective Reporting

- High latency reporting
- Spreadsheets
- Limited view reports
- Departmental data marts

Dynamic Learning for Optimal Care Guidance

- Population Health Analytics
- Evidence-based medicine
- Streaming Analytics
- Similarity Analytics

Enterprise – Wide Data Insights

- Data Governance
- Centralize Data
- Structured and Unstructured
- Data Sharing
- Cost of Care Intelligence

Natural language understanding
- Guided consumer experience
- Watson Applications
- Clinical Content Analysis
- Personalized Healthcare
Analytics strategy must span both knowledge & data-driven methods

From population averages ...

Knowledge-Driven Methods

- Scientific papers
- Books
- Guidelines

Published Knowledge

Identification of evidence-based best practice

- Behcet's Disease: 45%
- Sarcoidosis: 32%
- Lyme Disease: 1%

Closing the translational knowledge gap

To insights for individual patients

Data-Driven Methods

- Longitudinal health records
- Claims data
- Patient reported data

Observational Data

Patient Care and Insights

Patient Similarity Analytics

Enabling Personalized Insights from institutional data
Healthcare Analytics Progression

Cognitive Computing

Natural Language

Predictive

Patient Similarity

‘Big Data’

Volume, Velocity, Variety…

Trusted Information Platform

Dashboards
Watson is ushering in a new era of computing

Tabulating Systems Era

Programmable Systems Era

Cognitive Systems Era

1900

1950

2011
Cognitive Systems Era

Interact Naturally

Learn and Reason

Discover and Decide
The Learning Healthcare System

- Build evidence out of practice
  - Set standards based on clinical goals, and evidence-based practice
- Leverage analytics to extract actionable knowledge
  - Measure impact of change through outcomes analysis and research
- Focus on “making it easy to do the right thing”
  - Leverage EHR to optimize workflow and support decision making
- Collaborate to foster knowledge translation
  - Develop reports to monitor the practice change
  - Measure impact of change through outcomes analysis and research
Thanks!

Judy Murphy
murphyja@us.ibm.com