The Need for Trended Data

Coordinated & Connected Care Symposium, Session CCC1, March 5, 2018

Judy Murphy, RN, FACMI, FHIMSS, FAAN, Chief Nursing Officer, IBM Global Healthcare
Conflict of Interest

Judy Murphy, RN, FACMI, FHIMSS, FAAN

Has no real or apparent conflicts of interest to report.
Learning Objectives

• Outline the Paradigm Shift from Episodic to Predictive to Preventive care

• Demonstrate the value of dynamic trending vs. static clinical data – at the individual patient and aggregate level

• Discuss the ability to predict and prevent using aggregated clinical data, cognitive learning, and clinical decision support
Agenda

• Evolving healthcare landscape – what is changing and why we need to change too
• Value-Based Care
• Population Health Management
• Challenges
• Data as the new currency
• Paradigm Shift in the analytics journey
• Cognitive Learning and Insights
## Evolution to a New Model for Healthcare

<table>
<thead>
<tr>
<th>Old Healthcare</th>
<th>New Healthcare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fee for service</td>
<td>Pay for performance</td>
</tr>
<tr>
<td>Volume</td>
<td>Value</td>
</tr>
<tr>
<td>Delivery</td>
<td>Quality Outcome</td>
</tr>
<tr>
<td>Employer-centric</td>
<td>Consumer-centric</td>
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<tr>
<td>Prices unknown</td>
<td>Cost transparency</td>
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<tr>
<td>One way dialogue</td>
<td>Engaged &amp; mobile</td>
</tr>
<tr>
<td>Transactional</td>
<td>Brand loyal</td>
</tr>
<tr>
<td>Data poor &amp; disconnected</td>
<td>Integrated rich “big” data</td>
</tr>
<tr>
<td>Reactive</td>
<td>Predictive &amp; prescriptive</td>
</tr>
<tr>
<td>Standards</td>
<td>Personalized &amp; optimized</td>
</tr>
</tbody>
</table>
The new model is Value Based Care; centered around the patient.

Value = \frac{Experience}{Cost \& Quality}

- The journey to improve value
- Improve patient experience, satisfaction, engagement
- Reduce cost, take out waste, manage risk, improve efficiency, reduce errors, improve quality
The New Model of Care

PAST

Compete on **Volume**
- Individual Patients
- Treat Patients Who Arrive
- Focus on Episodic Encounters

Fee for Service

FUTURE

Compete on **Outcomes**
- Population Health Management
- Treat Entire Population
- Focus on Health and Wellness

Value-Based Care
# Population Health Management

## POPULATION

<table>
<thead>
<tr>
<th></th>
<th>40-60%</th>
<th>20-25%</th>
<th>5-15%</th>
<th>2-3%</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTHY / LOW RISK</td>
<td><img src="image1.png" alt="Healthy/Low Risk" /></td>
<td><img src="image2.png" alt="At Risk" /></td>
<td><img src="image3.png" alt="Chronic" /></td>
<td><img src="image4.png" alt="Active Disease" /></td>
</tr>
</tbody>
</table>

## RISK STRATIFICATION

<table>
<thead>
<tr>
<th>RELATIVE COST</th>
<th>5-10%</th>
<th>15-20%</th>
<th>30-40%</th>
<th>40-50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No or very-low touch</td>
<td><img src="image5.png" alt="Low Engagement" /></td>
<td><img src="image6.png" alt="Medium to High Engagement" /></td>
<td><img src="image7.png" alt="High Engagement" /></td>
<td></td>
</tr>
</tbody>
</table>

## ENGAGEMENT

<table>
<thead>
<tr>
<th>OUTREACH</th>
<th>Fully automated Validate from data</th>
<th>Mostly automated with email, call, text, mobile app</th>
<th>Blended - retail outlet, care mgt, automated</th>
<th>Active Case Mgmt</th>
</tr>
</thead>
</table>

~20% of population drives ~80% of cost
Population Health Management

With Population Health Management, we help move people from right to left – and work to keep them there.
The challenge …

Catastrophic Patients This Year That Were Not Catastrophic Last Year

67%

Source: Healthcare Risk Adjustment and Predictive Modeling by Ian Duncan
The challenge ...

The challenge …

Shifting the curve requires Patient Engagement

“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
Data as the new currency
Paradigm Shift
(Analytics Journey)

Information Layer
How is data managed and used?

Descriptive Layer
What is happening or what has happened?

Predictive Layer
What could happen?

Prescriptive Layer
How can we achieve the best outcomes?

Cognitive Layer
Tell me the best course of action

- Personalized Healthcare
- Optimal Treatment
- Patient Similarity
- Clinical Research
- Guided Consumer Experience
- Early Interventions
- Predictive Modeling
- Forecasting
- Simulation
- Healthcare Dashboards
- Healthcare Reporting
- Financial Planning
- Compliance/Risk
- Data Models
- Data Management
- Data Governance
- Content Management
Analytics must span both knowledge & data-driven methods

From population averages …

Knowledge-Driven Methods

- Scientific papers
- Books
- Guidelines

Identification of evidence-based best practice

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

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
Cognitive Insights for Individual & Population Health

- Medical Literature
- Guidelines
- Institutional Knowledge

Cognitive Learning

- Exogenous data – 60%
- Genomics data – 30%
- Clinical data – 10%
Social determinants of health converge with traditional care.
Care Management: the Future

Everyone has a cognitive care plan with clinical decision support that helps determine the most effective mix of high-touch and low-touch interventions.
The vision:
Better health, managed costs, and best experience enabled through data analytics and cognitive insights

- A comprehensive view of the individual and population - using clinical, social and other key determinants of health
- Personalized care at scale - engaging patients as individuals without compromising efficiency
- Population Health Management - providing insights to manage health/wellness and care for an individual and across a population
Questions

Thanks!

Judy Murphy

✉️ murphyja@us.ibm.com

🐦 @JudyMurphyHIT