How Innovative Technology Can Change Care Today And In the Future

National Governors Association
April 22, 2015
Paging Dr. Robot
Not Such a Farfetched Idea

Not Such a Farfetched Idea

December 24, 2012

“Doctor Robot Will See You Shortly”
September 16, 2013

Three Areas of Focus in Care Delivery Innovation

- **High-Value Care Management**
  Expand the primary care team to include underutilized practice staff, specialists, caregivers, patients

- **Effective Episodic Care**
  Deploy technology and workforce to establish high-quality, cost-effective episodes of care

- **Convenient Patient Access**
  Use technology solutions to help patients access better care at lower costs

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**Source:** Advisory Board interviews and analysis.

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<table>
<thead>
<tr>
<th>Percentage of Population Served</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
</tr>
<tr>
<td>100%</td>
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**Fee-for-Service**

**Payment Models**

**Population Health**
Walmart Testing Enhanced Primary Care Model to Replace Legacy Clinics

**Evolution of Model**

<table>
<thead>
<tr>
<th>Legacy Clinic</th>
<th>Expanded Primary Care Clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Low-severity illnesses</td>
<td>Chronic disease management</td>
</tr>
<tr>
<td>✓ Minor injuries</td>
<td>Preventive and wellness services</td>
</tr>
<tr>
<td>✓ Immunizations</td>
<td>Specialist referrals</td>
</tr>
</tbody>
</table>

**Case in Brief: Walmart Care Clinic Pilot**
- Walmart piloting new primary care clinic staffed by two contracted NPs in Copperas Cove, TX
- Service offerings expand beyond traditional Walmart retail clinic to include chronic disease management, preventive and wellness services, and specialist referrals

**Low Price Guarantee in Primary Care**
- **$4.00**
  - Cost of a clinic visit for employees on Walmart’s health plan
- **$40.00**
  - Cost of a clinic visit for customers and non-covered associates

Source: Advisory Board interviews and analysis.
Theranos Enables Cost-Efficient Blood Testing in Retail Clinics

Overview of Walgreens’ Care Delivery Strategy

- **Medication Management**: Offering medication consults for complex drug regimens
- **Quality Improvement**: Having pharmacists check patient vitals
- **Healthcare Clinic**: Serving low-acuity care needs clinics
- **Care Coordination**: Supporting care coordination teams

**Case in Brief: Walgreens**

- Palo Alto-based technology company
- Developed a miniature medical device that quickly detects hundreds of diseases with a minute amount of blood
- Partnered with Walgreens in 2013; have opened Theranos Wellness Centers in Walgreens stores in Palo Alto and Phoenix


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Evolving to Real-Time Virtual Visits

MDLIVE Visit Platform Enhances Access, Convenience for Patients

**MDLIVE Enabling New Business**

- Patient requests appointment through MDLive.com
- Operator determines if patient need fits e-consult capability and collects patient payment
- Sentara Medical Group provider has 15 minutes to respond, then request passed along to MDLIVE provider pool

**Virginia patients see Sentara-branded website**

**A Small Cost for Virtual Care**

- Cost per visit for unsubscribed patients: $45
- Cost per visit for Sentara employees: $15
- Cost of an annual subscription to MDLIVE: $199

**Case in Brief: Sentara Healthcare/MDLIVE**

- Multi-hospital system headquartered in Norfolk, Virginia; owns equity stake in MDLIVE—a telehealth provider of online, on-demand health care delivery services and software
- Provides access to virtual care for any patient; Virginia-based web visitors triaged to co-branded virtual product to labeled “Sentara—Empowered by MDLIVE”
- Phone, web, and email visit services include general health, pediatric health, mental health

Source: MDLIVE available at [www.MDLIVE.com](http://www.MDLIVE.com), accessed October 1, 2013; Advisory Board interviews and analysis.
Better Care Decisions Facilitated by Transparency

PokitDok Offers Consumer Platform for Comparison Shopping

Innovation in Brief: PokitDok

- Website, mobile app marketed to individuals with high-deductible health plans
- Offers database of over three million providers

Taking “Consumer-Driven” to the Next Level

- **Service:** Carpal Tunnel Surgery
- **Location:** TravelSurgeryUSA, Charleston, SC
- **Budget:** $4,000
- **Payment Type:**
  - Cash
  - HSA
  - Insurance

Request Quote

“What Castlight Health is to people with employer-provided health insurance, PokitDok is to people with high-deductible plans. The new ‘set your price’ service for basic healthcare services may be what ‘consumer-driven healthcare’ needs to become a realistic option.”

*MedCity News*

Empowering Consumers Through Plan Choice

StrideHealth Recommends Plans Based on Medical Conditions, Networks

StrideHealth Option to Filter Plans By Ongoing Illness

Case in Brief: StrideHealth

- Startup exchange platform based in San Francisco, California that helps individuals compare plans on Covered California
- Uses recommendation engine to help individuals compare plans by estimated total cost, in-network physicians, medical conditions, and usual drugs

Teleradiology Offers Greater Efficiency, Scalability of Radiology Services

Percentage of Practices Using External Off-Hours Teleradiology

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>2003</td>
<td>15%</td>
</tr>
<tr>
<td>2007</td>
<td>44%</td>
</tr>
<tr>
<td>2011</td>
<td>55%</td>
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n=1,321 | n=485 | n=140

A Short Jump from Night to Day Reads

“Nobody ever questions the value of imaging in the modern practice of medicine today, but many question the value of onsite radiologists.”

Cynthia Sherry, MD
Texas Health Presbyterian Dallas

Service Guarantees by Select Remote Radiology Companies

Onsite technologist and nurse training programs

75% of radiologists fellowship trained in subspecialty

Turnaround time for all studies averages 25 minutes

Providing More Time for Patient Care

Augmedix Reclaiming Time for Direct Patient Care through Google Glass

Reduces Peripheral Tasks

Functions
• EHR\(^1\) documentation
• Point-of-view video recording
• Visual feedback in Glass display

Advantages
• Hands-free connectivity
• Unobtrusive to care delivery
• Interactive at point of care

Gaining Physician and Patient Acceptance
Percentage of patients “very comfortable” with physician using Augmedix, Google Glass during appointment
99%

Case in Brief: Augmedix
• Health care start-up company based in San Francisco, California
• Developed a platform powered by Google Glass to streamline physician data entry and electronic health record (EHR) interaction at the point of care
• Currently piloting platform at several sites; physicians experience productivity gains through Augmedix, without negatively impacting patient satisfaction, quality of care

1) Electronic Health Record

Source: Augmedix.com; Advisory Board interviews and analysis.
Partners HealthCare Triaging Low Acuity Demand via Virtual Visits

**Protecting Practice Capacity for Complex Cases**

**Case in Brief: Partners HealthCare Center for Connected Health**
- Division of Partners HealthCare, an integrated health system in Boston, focusing on technology-enabled care delivery
- Developed “virtual visits” to triage low-acuity dermatology cases for primary care
- Diverts easily resolved volume, reduces avoidable demand for in-person dermatology

**Diverting Demand without Sacrificing Quality**

- **50%** Percentage of questions that can be answered immediately through virtual consult
- **30%** Percentage of patients requiring an in-person follow-up after consult
- **90%** Rate of satisfaction with digital care model among participating patients

Source: Advisory Board interviews and analysis.
Technology Enabling Non-Traditional Solutions

EyeNetra’s Smartphone Technology Enables Self Vision Exam

Case in Brief: EyeNetra

- Consumer technology and smartphone application company in Somerville, Massachusetts
- Developed Netra\(^G\) hardware and application; enables consumers to conduct autonomous vision exams for glasses, contact measurements\(^1\)
- Proven to be as accurate as top-tier auto-refractors in IRB-approved side-by-side trials, at a fraction of the cost

EyeNetra Eye Exams

**Diagnosable Conditions**
- Nearsightedness
- Farsightedness
- Misshapen Eye
- Age-related Blurriness
- Pupillary Distance

**Netra\(^G\) Smartphone Technology**

Consumers can use outputs from Netra\(^G\) solutions to obtain glasses, contacts under guidance from eye care professional

**Clear and Immediate Advantages**

- Accuracy
- Affordability
- Ease of Use
- Mobility

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1) EyeNetra states that device should be used under “guidance from an eyecare professional.”

Source: Advisory Board interviews and analysis.
Analytics Enabling High-Value Care Management

Data Giving Rise to Ability to Predict and Prevent Medical Problems

Venture Funding for Companies Using Predictive Analytics¹

2011-Q3 2014

- 2011: $201M
- 2012: $300M
- 2013: $520M
- 2014 (Q1-Q3): $902M

Notable Deals

<table>
<thead>
<tr>
<th>Year</th>
<th>Funding</th>
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<tbody>
<tr>
<td>2011</td>
<td>$201M</td>
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¹ Only includes deals with value greater than $2M.

Data-Driven Care Management Resource Allocation

MissionPoint Using Data to Drive Outreach to Highest-Risk Patients

Analysis of Data
• Use daily data from Crimson and other sources to identify at-risk patients on a daily basis
• Use monthly data from Crimson and other sources as a secondary method for identifying at-risk patients

Assignment of Care Managers
• Once a patient is identified, they are triaged to one of three specialized care teams:
  – Transitional Team
  – Ambulatory Team
  – Integrated Care Team

Results

7.08%
Reduction in readmission rate for Nashville MSSP population, Jul 2012-June 2014

4.12%
Reduction in overall costs for Nashville Associate population, Jan 2012-Jul 2014

Case in Brief: MissionPoint Health Partners
• Clinically integrated network in Middle Tennessee comprised of 1,600 physicians
• Using data analytics to enable high-risk patient identification, to assign patients to one of three specialized care teams, and to support care manager workflow

Source: Advisory Board interviews and analysis.
A Unified Approach to Care Management

Creating an Aligned Organization to House Care Management

Centralizing Care Management Efforts

- Patient data
- Provider data
- Payer data

CMO, Montefiore Care Management

- Disease registries
- Predictive modeling
- Clinical guidelines

Automated and standardized workflow management and monitoring

Case in Brief: CMO, Montefiore Care Management

- Health care management company that provides technological and intervention-based care management to Montefiore Medical Center in Bronx, New York
- Manages the care of 225,000 patients under risk or shared risk contracts

Source: Advisory Board interviews and analysis.
Elevating the Role of Non-Physician Providers

AkeLex Brings Care Guidelines to the Point of Care

Sample of Patients Presenting to Primary Care

Majority of patients diagnosed and treated by non-physician providers using AkeLex

Highly complex patients diagnosed and treated by PCP

Adaptive Knowledge Engine

- Uses artificial intelligence and pattern-based learning to improve the accuracy of diagnosis and treatment of patients
- Provides real-time support to evaluations, triage, and management decisions
- Creates a differential diagnosis based on data; then dynamically poses follow-up questions to identify outliers and communicate a more complete clinical picture

75%

Primary care patients autonomously diagnosed and treated by non-physician providers using AkeLex

Source: Advisory Board interviews and analysis.
Case in Brief: Veterans Health Administration

- America’s largest integrated health care system, serving 8.7 million veterans each year across 1,700 sites located throughout the country
- In 2013, launched Family Caregiver Pilot Program, through which lay caregivers were provided with iPads pre-loaded with apps to assist with health information access, care management

Engaging Patients in Their Own Care

WellFrame Automatically Customizes, Adjusts Post-Discharge Care Plan

WellFrame Post-Discharge Care Management Mobile Platform

**Technology in Brief: WellFrame**
- Mobile platform designed to provide patients with automated, customized, and step-by-step care plan guidance post-discharge
- Piloted by Brigham and Women’s Hospital, Columbia University, South Shore Hospital, and McLean Hospital

**Technology in Brief: WellFrame**

- Patient-facing care plan in the form of a daily to-do list
- Automatically readjusts goals based on previous performance
- Allows patients and care managers to communicate via asynchronous messaging
- Syncs with external apps and devices

**Allowing for Patient Engagement at Scale**

**5X** Increase in patient to care manager ratio enabled by WellFrame

Source: Advisory Board interviews and analysis.
Role for States to Play in Facilitating Innovation

Implications for States

1. States can drive payment incentives for innovation in state-run programs by covering new methods of providing care and to reward value of care provided rather than volume.

2. States can encourage innovation by adapting regulatory requirements to appropriately facilitate and grow innovative approaches (i.e., telemedicine and scope of practice).

3. States can provide innovators and providers timely access to data—including individual and aggregate clinical and financial data—to facilitate potential innovations.

4. States can support employers, providers and entrepreneurs in scaling innovative technology solutions through education, access, and funding.

5. States can enhance consumer and patient awareness/utilization of new tools through public health education, incentives, and privacy protection.