Telehealth and Telemedicine

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MedTenn 16

April 30, 2016
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Disclosure of Interest

Research/Education Support
1. Allergan
2. AstraZeneca
3. VICTR
4. Ipsen
5. Medtronic
6. Merz
7. Vanderbilt University
8. Robert Whitson
9. Jeff Martin

Consultant
Allergan, Ipsen, Medtronic, AfPA

Clinical Trials
Allergan, Merz, Medtronic

Stocks or equity
None

Off Label Discussion
DBS in Early Stage Parkinson’s Disease
Agenda

• Overview of Telemedicine
• Vanderbilt Teleneurology
• Technology
• Future of Telehealth
Defining Telemedicine

- **e-Health**
  - Electronic processing
  - Exchange, storage, retrieval
  - All virtual health information and services

- **Telehealth**
  - Clinical services
  - Non-clinical services (i.e., health education, health promotion, health maintenance)

- **mHealth**

- **Telemedicine**
  - Remote clinical services
  - Resolving a Chief Complaint
  - Individual patient interaction
Types of Telemedicine

- Emergent hospital and ED
- Intensive Care consults and ICU monitoring
- Ambulatory specialty
- Home Care in home monitoring
- Direct to patient
- Store and Forward
- eConsult
Why Telemedicine?

- Increase access to care
- Increase compliance
- Reduce transfers/readmits
- Avoid unnecessary services
- Reduce costs
Extending Access to Providers for High-Risk, Rural, and Wellness Visits

Use Cases
- Chronic disease management
- Behavioral health video consults
- Rural access to care
- 24/7 coverage

Major Vendors
- MDLive
- Teladoc
- American Well
- Zipnosis
- CampusMD
- Stat Doctors
- Sentara

“I think [virtual visits] will become a normal part of health care in three to five years.”

Dr. Harry Leider
Walgreens CMO

Low-Cost Alternative to Traditional Primary Care

$49
Cost of Walgreens virtual visit, most of which goes to physician

9,000
Interactions per week via Walgreens’ Pharmacy Chat virtual visit platform

2M
Estimated new patients added for MDLive following partnership with Walgreens

VA Telemedicine

- 690,000 Veterans received telemedicine care
- 2 million Telemedicine visits FY 14
- 22% predicted annual growth rate
- $1.2 billion telemedicine budget FY 16
  - $126 million increase over FY 15

Neighboring Telemedicine Programs

University of Arkansas
- State-wide network for emergent consults
- Partnered with State and other hospital systems

University of Georgia
- Georgia Regents is the pioneer of Telestroke
- Primary care in schools: students and staff

University of Mississippi
- 30+ specialties, 500,000 encounters, state-wide
Learning from our Peers

Mercy Telehealth Services
- Largest in U.S.; 75+ services, six states

Dartmouth-Hitchcock
- Launching virtual clinic hospital / home

University of Michigan
- Chronic diseases: CHF, COPD, Stroke

UPMC
- 15 services, occupational health

UCLA
- Direct to patients

Mercy’s 120,000 square foot Virtual Health Center opens in 2015
Mercy Telemedicine Network

32 hospitals, 300 outpatient locations
39,000 co-workers
1,700 integrated physicians
3 Million telehealth visits projected 2015 – 2020

By the Numbers:
- Hospitals: 32
- Outpatient Facilities: 300
- Service Area: Arkansas, Kansas, Missouri, Oklahoma
- Outreach Ministries: Louisiana, Mississippi, Texas
- Sixth largest Catholic health care system in the U.S.
- Co-workers: 38,000
- Medical Staff: 5,200
- Mercy Clinic Physicians: over 1,900
- ER Patient Visits: 596,046
- Outpatient Surgeries: 102,269
- Births: 21,506
- Licensed Beds: 4,571
- Traditional Charity Care: $131 million
- Unreimbursed Medicaid Costs: $61 million
- Other Community Benefits: $48.4 million
- Assets: $5.2 billion
- Operating Revenue: $4.2 billion
Telemedicine Barriers

• Federal policy
• State law
• State regulations
• Payers
• Physicians
Medicaid Programs That Reimburse RPM\textsuperscript{1,2}

Reimbursement Policies:
- States may reimburse for telehealth under Medicaid so long as the service satisfies federal requirements of efficiency, economy, and quality of care.
- Extensive control is given to states to decide how to structure and administer their Medicaid telehealth policy.

Impact on Providers:
- Medicaid patients are often high-risk and would benefit greatly from RPM, especially if they cannot easily access healthcare services.
- More Medicaid programs reimburse for live video than RPM, but fewer reimburse store-and-forward.

Telehealth Parity Laws\textsuperscript{3}

Parity Policies:
- Health insurers are required to cover services delivered remotely via telemedicine at the same rate as the same service delivered in person.
- 13 other states have pending legislation on parity introduced in 2014 (AK, CT, FL, IL, IA, MA, NE, NJ, NY, OH, PA, RI, SC, TN, WA, WV).

Impact on Providers:
- Providers in these states might be able to adjust their capacities if they can take on some patient visits remotely for the same reimbursement.
- Providers should track changing legislation.

Vanderbilt Telemedicine

Goal

Support VUMC in population health management:

- Elevate community based sub-specialty care
- Identify the right patients for transfer to VUMC
- Treat all others in the lowest cost environment
  - Reduce unnecessary transfers
- Closest to the patient’s home
Why Hand-Held?

- More **versatile** than other robotic systems
- Readily **available** for emergent visits
- More **affordable** than cart technology
- Easy to use; requires **minimal training**
More About Technology

- Three apps including Jenesis, StarPanel (EMR), and FaceTime
- IT Risk Assessment completed to demonstrate HIPAA compliance of FaceTime
- Approval by VUMC Information, Privacy & Security Executive Committee
VUMC TeleNeurology
Progress Report
Inception - FY16 Q2
(February 2014 - December 2015)

Total Consultations: 1,698
Neurology Patient Retention Rate at OSH\(^1\): 87%
Transfer Rate to VUMC: 12%
Transfer Rate to other Health Facility\(^2\): 1%

Partner Hospitals

<table>
<thead>
<tr>
<th>Originating Site Hospital</th>
<th>Location</th>
<th>Inception Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Williamson Medical Center</td>
<td>Franklin, TN</td>
<td>February 2014</td>
</tr>
<tr>
<td>Sumner Regional Medical Center</td>
<td>Gallatin, TN</td>
<td>July 2014</td>
</tr>
<tr>
<td>Northcrest Medical Center</td>
<td>Springfield, TN</td>
<td>September 2014</td>
</tr>
<tr>
<td>Blount Memorial Hospital</td>
<td>Maryville, TN</td>
<td>December 2014</td>
</tr>
<tr>
<td>Franklin Woods Community Hospital</td>
<td>Johnson City, TN</td>
<td>March 2015</td>
</tr>
<tr>
<td>Sycamore Shoals Hospital</td>
<td>Elizabethtown, TN</td>
<td>March 2015</td>
</tr>
<tr>
<td>Livingston Regional Hospital</td>
<td>Livingston, TN</td>
<td>August 2015</td>
</tr>
<tr>
<td>Riverview Regional Medical Center</td>
<td>Carthage, TN</td>
<td>October 2015</td>
</tr>
<tr>
<td>Laughlin Memorial Hospital</td>
<td>Greenville, TN</td>
<td>Signed Contract</td>
</tr>
</tbody>
</table>

Total Sites Live: 8  Total Sites in Implementation: 1
Teleneurology Consult FY Growth

<table>
<thead>
<tr>
<th></th>
<th>FY14</th>
<th>FY15</th>
<th>FY16 YTD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed Consults</td>
<td>146</td>
<td>1137</td>
<td>561</td>
</tr>
</tbody>
</table>
TeleNeurology Patient Diagnosis

- Teleneurology Other
- Teleneurology Stroke
- Teleneurology Other with Transfer
- Teleneurology Stroke with Transfer

Total by Diagnosis:
- 56%
- 33%
- 5%
- 6%
Physician Satisfaction

“Teleneurology has made a positive impact on our patients. When I arrive to see the patient, the workup is already complete, and I can review the Teleneurologist’s recommendations. Neurology patients are being discharged 1-2 days earlier than before the service started.”

- Megan Mason, MD, Neurologist
TeleNeurology Consult Frequency

Patient Count by IR Hour Group

<table>
<thead>
<tr>
<th>Time</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 am-3 am</td>
<td>85</td>
<td>4%</td>
</tr>
<tr>
<td>3 am-6 am</td>
<td>27</td>
<td>2%</td>
</tr>
<tr>
<td>6 am-9 am</td>
<td>125</td>
<td>7%</td>
</tr>
<tr>
<td>9 am-12 pm</td>
<td>263</td>
<td>16%</td>
</tr>
<tr>
<td>12 pm-3 pm</td>
<td>404</td>
<td>23%</td>
</tr>
<tr>
<td>3 pm-6 pm</td>
<td>383</td>
<td>21%</td>
</tr>
<tr>
<td>6 pm-9 pm</td>
<td>295</td>
<td>17%</td>
</tr>
<tr>
<td>9 pm-12 am</td>
<td>165</td>
<td>9%</td>
</tr>
</tbody>
</table>

TeleNeurology Timestamping

<table>
<thead>
<tr>
<th>Description</th>
<th>Time (Minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average time from initial request until neurologist paged</td>
<td>0:09</td>
</tr>
<tr>
<td>Average time from neurologist paged until connected with originating site</td>
<td>0:07</td>
</tr>
<tr>
<td>Average time from initial request until neurologist connected with originating site</td>
<td>0:16</td>
</tr>
</tbody>
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The Future of Telemedicine
Case-Based Telehealth Training for Primary Care Providers of Adults with IDD

Janet Shouse
Program Coordinator
IDD Toolkit
(www.iddtoolkit.org)
Vanderbilt Kennedy Center

Project funded by
The Special Hope Foundation
Palo Alto, Calif.
Case-Based Telehealth Training for Primary Care Providers of Adults with IDD

A grant-funded project to assess the impact of live educational videoconferencing with community primary care providers in improving the health care for adults with intellectual and developmental disabilities, such as autism, Down syndrome and Fragile X.
Case-Based Telehealth Training for Primary Care Providers of Adults with IDD

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Case-Based Telehealth Training for Primary Care Providers of Adults with IDD

Adults with intellectual or other developmental disabilities face a cascade of health disparities. They often:

• have complex or difficult-to-treat medical conditions
• have difficulty accessing health care
• may receive inadequate health care
• may have difficulties expressing their symptoms and pain
• receive little attention to wellness, preventive care and health promotion
Case-Based Telehealth Training for Primary Care Providers of Adults with IDD

• Vanderbilt Kennedy Center received Special Hope Foundation grant in January 2016
• Telehealth, not telemedicine
• 10 hour-long sessions, one a month, at midday-May to February 2017
• A panel of clinicians, including family practice, neurology, psychiatry, nursing, behavior analysis, and occupational therapy
• CME credits awarded upon completion
Case-Based Telehealth Training for Primary Care Providers of Adults with IDD

- Content will build on information from the IDD Toolkit (www.iddtoolkit.org)
- Similar to “grand rounds”
- Providers will be able to share difficult cases
- Didactic presentations on specific topics will complement the cases (e.g., autism spectrum disorder, sleep disorders, psychototropic medication management).
GENERAL ISSUES

- Communicating Effectively
- Informed Consent
- Informed Consent Checklist
- Adaptive Functioning and Different Levels of IDD
- Office Organizational tips
- Today’s Visit Form

PHYSICAL HEALTH ISSUES

- Cumulative Patient Profile
- Female Preventive Care Checklist
- Male Preventive Care Checklist

BEHAVIORAL AND MENTAL HEALTH ISSUES

- Initial Management of Behavioral Issues in Primary Care
- Interventions for Specific Behavioral Issues

These tools, except for Autism table, were developed by the Developmental Disabilities Primary Care Initiative (DDPCI) (2005-2014), Surrey Place Centre, Toronto, Canada, funded by Ontario Ministry of Community and Social Services and Ontario Ministry of Health and Long-Term Care, Surrey Place Centre, and Surrey Place Centre Charitable Foundation. The DDPCI published Tools for the Primary Care of People with Developmental Disabilities to complement the Primary care of adults with developmental disabilities: Canadian consensus guidelines. All tools © 2011 Surrey Place Centre. Adapted for use in the U.S. by the Developmental Disabilities Health Care Community.

ONLINE TRAINING IS AVAILABLE USING THE FOLLOWING LINKS

- For health care professionals, training entitled “Appropriate Use of Psychotropic Medications for People with IDD: Helping Individuals Get the Best Behavioral Health Care”. (Free CME credit is offered upon completion).
The goals of the project

- Community health care providers will be better equipped and more comfortable caring for adults with IDD.
- Patients may get better, more timely care.
- Patients may receive appropriate preventive care.
- Patients may have less need to rely on hospital emergency departments or specialists for routine care.
- The rate of polypharmacy, particularly psychotropic medications, may be reduced.
Specifics of the project

• At least 20 primary care physicians, advanced practice nurses or physician’s assistants will participate
• Pre- and post-surveys regarding knowledge and comfort levels in treating patients with IDD
• Interactive videoconferencing
• Simple, easy-to-use technology (I promise)
• Midday sessions that can be joined during lunch.
• We hope to create a community of practice.
Dates for our sessions

- Start date- May 5
- June 9
- July 7
- August 11
- Sept. 8
- Oct. 13
- Nov. 10
- Dec. 8
- Jan. 12, 2017
- Feb. 8, 2017

Conducted from noon to 1 p.m. Central Time
For Questions
or Further Information

Contact Janet Shouse
at
615-875-8833
or
janet.shouse@vanderbilt.edu