Virtual Care: Building a Sustainable Model with Real Impact
The nation’s health care system is broken.
CHEVROLET: SOLVING ISSUES BEFORE THEY HAPPEN

Prognostics predict when certain components need attention – coming later this year.

DIAGNOSTICS AND PROGNOSTICS

Vehicle Data Transmitted

Real-time Notification

IN-VEHICLE MONITORING

Starter Motor
Fuel Pump
Battery

RemoteLink
Text
email
In-vehicle

HOW IT WORKS WITH YOUR BATTERY

Battery Conditions
LOW BATTERY PREDICTED
Alert Sent

Battery Alert
Your 2016 Equinox has a Battery Charge issue – Run Vehicle. See email for more info.

Issue Avoided
Opportunity

Consumer/Retail Strategy

• Person-centered care

Optimized Delivery Network

• Right Care, right place at right time

Integrated Delivery Network

• Efficient & effective system
Integration of virtual care services to fundamentally transform the patient and family centered care models of care in order to accelerate value creation in a fiscally sustainable way
Virtual Care Strategy

Access
Telemedicine
Virtual Clinics
RPM

Education
Training
Collaboration
CE

Workforce
Resource
Optimization
Why?

Enhance clinic services (Service)
- Enhance follow-up/monitoring efficiently & conveniently
- Provide specialty services
- Multi-disciplinary Rounds
  - (i.e. Pharmacist, Case Manager, Nutritionist, Therapists, Physician, Psychologist, Translator)

Expansion/Outreach (Access)
- Reach the underserved in new locations

Quality/Risk Management (Quality)
- Post discharge or post ED visit monitoring
- Patient education and engagement
- eSitter, eICU, Telehealth Quality RNs
4 Virtual Care Initiatives

- Telemedicine
- Virtual Clinics
- Remote Patient Monitoring (RPM)
- Command Center
TELEMEDICINE

VIRTUAL VISITS

RPM
Choosing the Right Technology

1. Start with a workflow that has been designed by a combination of clinical and technical staff.
2. Base technology on the clinical need.
3. Choose video technology that can be customized to various telehealth encounters.
4. Decide if information is needed electronically or can be relayed by the telepresenter.
5. Utilize the Hub sites electronic medical record to document encounters.
• **Clinical need drives the solution**
  
  – Mobile versus fixed
  
  – Examination needed (Psychiatry versus Geriatrics)
  
  – Image sharing

• **Connectivity options**
  
  – Wireless versus wired broadband connection
  
  – Cellular
  
  – Technical assessment for bandwidth availability
Connect* all facilities for specialty services, collaboration, resource sharing & transfer evaluations

Embed* telemedicine services in existing programs & expand where needed to improve outcomes & lower cost

Optimize & Integrate* services across network
UMMC Center for Telehealth

- 202 telehealth sites of service
- 37 medical specialties
- 8 types of locations
- Over 100,000 telehealth visits/year
- Over 800,000 telehealth visits completed

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Consider an Open Platform Solution

• Contract for services you need- “ala carte”
• Fees based on services requested
  • (ie. telenetwork, clinical services, home monitoring)
• Provide a turnkey solution
  • Equipment, Education, Implementation, Support
• Market the new services
• Provide new services to your community
• Bill insurance for telehealth facility & pro fee
“TeleNetworking Services” provides access to an open source Telehealth Network without requiring you to build your own. Use only what you need, saving you time and money.

- Assessment & Technology recommendation
- Installation & use of Telehealth Video Network
- Tiered levels of technology support
Monitor Impact/Outcomes

• Identify Metrics before starting
• Get baseline
• Study outcomes for quality, efficiency, financial and satisfaction
• Disseminate results
### Table 5. Top ontologies for all recorded TelEmergency consults

<table>
<thead>
<tr>
<th>Ontology</th>
<th>Count</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest Pain</td>
<td>684 (11)</td>
<td></td>
</tr>
<tr>
<td>Blunt Trauma</td>
<td>413 (7)</td>
<td></td>
</tr>
<tr>
<td>Abdominal Pain</td>
<td>389 (6)</td>
<td></td>
</tr>
<tr>
<td>Syncope</td>
<td>258 (4)</td>
<td></td>
</tr>
<tr>
<td>General Medical</td>
<td>255 (4)</td>
<td></td>
</tr>
<tr>
<td>Shortness of Breath</td>
<td>239 (4)</td>
<td></td>
</tr>
<tr>
<td>Fracture</td>
<td>217 (4)</td>
<td></td>
</tr>
<tr>
<td>Infection</td>
<td>198 (3)</td>
<td></td>
</tr>
<tr>
<td>Dysrhythmia</td>
<td>181 (3)</td>
<td></td>
</tr>
<tr>
<td>N/V/D</td>
<td>176 (3)</td>
<td></td>
</tr>
</tbody>
</table>

- **Access to Care**
  - 15 rural MS hospitals

- **Multidisciplinary Team**
  - NP & Board Certified EM physician

- **Cost Effective Staffing**
  - EXPENSE
    - 25% reduction in staffing costs

- **Rural Communities Benefit**
  - admissions locally

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**TelEmergency Outcomes**
New Site-Satisfaction Survey
Community Hospital (Q1 2014)

100% physician satisfaction

Total patients seen with TelEmergency: 884
Total admission to that facility: 208
Total transfers from that facility: 68
Total discharges: 608

Total admissions to this facility increased by 101 patients in Q1 of program
## COMPARISON WITH AND WITHOUT THE USE OF TELEMERGENCY

<table>
<thead>
<tr>
<th>Category</th>
<th>Hospital With Minimal Usage of TelEmergency</th>
<th>Site Utilizing TelEmergency</th>
<th>Site Not Utilizing TelEmergency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Transfer for Specialty Care</td>
<td>29%</td>
<td>7%</td>
<td>11.4%</td>
</tr>
<tr>
<td>TelEmergency Consult / Transfers Avoided</td>
<td>6%</td>
<td>6%</td>
<td>12%</td>
</tr>
<tr>
<td>Transferred-Discharged Prior to 24 Hours</td>
<td>12%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Relative Survivability of Cardiopulmonary Arrest in Rural Emergency Departments Utilizing Telemedicine

Kristi Henderson, DNP, NP-BC, LouAnn H. Woodward, MD, Richard L. Summers, MD

Department of Emergency Medicine
University of Mississippi Medical Center
2500 North State Street, Jackson, MS 39216
Virtual Clinics

Mobile Clinics extend Seton services to new non-healthcare locations

<table>
<thead>
<tr>
<th>Benefits</th>
<th>New Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Waiting Rooms</td>
<td>Businesses for Employee Health</td>
</tr>
<tr>
<td>No Travel Time</td>
<td>College/Schools for Student Health</td>
</tr>
<tr>
<td>Less Time Away from work, school, life..</td>
<td>Retail (i.e.. Pharmacy, Grocery)</td>
</tr>
</tbody>
</table>
The world’s smallest and most affordable onsite clinic
Value Proposition for Employee Telehealth

Reduce Healthcare Cost
- Unlimited visits for no additional cost or copay
- Lower cost alternative to $110 doctor visits, $156 urgent care visits and $570 ER visits

Reduce Absenteeism and Increase Productivity
- 70% of doctor visits are for non-emergency care
- Employees no longer have to miss work for routine care

Company ROI
- Healthcare cost savings + productivity savings
- Directs employees toward cost-effective health care service and serves as prevention for more serious illnesses

Increase Employee Satisfaction
- Access to high quality care when and where you need it.
• Predictive Modeling
• Risk Stratification to customize care management service
• Target high impact patients
• Personalized care plans, interventions, and patient education
Translate to Meaningful and Actionable Data
### Tiered Health IT Approach

<table>
<thead>
<tr>
<th>Tier 1</th>
<th>Tier 2</th>
<th>Tier 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proactive IVR, Text, Portals</td>
<td>At Risk Population Tiered-solution</td>
<td>Population Health Tier 1 &amp; 2 plus care management, med adherence, video visits in home</td>
</tr>
</tbody>
</table>
• 180 patients enrolled in IVR program (3 month period)
  • 364 alerts (308 resolved by nurse)
  • 56 (15.4%) alerted with intervention required
    • 45 non-urgent
    • 11 urgent

• Cost avoidance from 11 urgent alerts resolved
  • ~$98,791 (based on $8,981 average admission)
Remote Patient Monitoring

1. Patient Selection
2. Engage with Technology
3. Monitor & Support
4. Measure & Analyze
Remote Patient Monitoring

- Daily Health Sessions
- Personalized Interventions
- Targeted Education
- Health Coaching
- Behavior Modification
- Patient Empowerment
### Threshold Violations

<table>
<thead>
<tr>
<th>Name</th>
<th>Message</th>
<th>Vital Signs</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Osborn, Tommie U</td>
<td><em>What was your blood glucose level between 131-24</em></td>
<td>SpO₂ 98 %; HR 73 Bpm</td>
<td><em>FEV₁ 1.71 L; PEF 93 L/min</em></td>
</tr>
<tr>
<td>Rivas, Lowell X</td>
<td><em>Have you been experiencing side effects when you take your medications?</em></td>
<td>WT: 124.3 Lbs</td>
<td>SpO₂ 97 %; HR 73 Bpm</td>
</tr>
<tr>
<td>Clay, Hannah M</td>
<td><em>Was your blood sugar within normal range after taking medication?</em></td>
<td>WT: 202.7 Lbs</td>
<td>BS: 148 mg/dL</td>
</tr>
<tr>
<td>Mays, Arthur C</td>
<td><em>What was your most recent blood glucose level? 30</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### For Follow Up

<table>
<thead>
<tr>
<th>Name</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hunt, Patsy I</td>
<td>7/17/2012 1:38:54 PM</td>
</tr>
<tr>
<td>Alvarado, Nicole J</td>
<td>7/17/2012 1:38:51 PM</td>
</tr>
</tbody>
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### Not Transmitted

*The Guide has not connected with the Virtual Care Suite since:*

<table>
<thead>
<tr>
<th>Name</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrillo, Nadine L</td>
<td></td>
</tr>
<tr>
<td>Chavez, Natalie E</td>
<td></td>
</tr>
<tr>
<td>Lewis, Elmer T</td>
<td></td>
</tr>
<tr>
<td>Lindsey, Krista M</td>
<td></td>
</tr>
<tr>
<td>Noble, Wesley Y</td>
<td></td>
</tr>
</tbody>
</table>

### Normal

<table>
<thead>
<tr>
<th>Name</th>
<th>Time</th>
<th>Vital Signs</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hunt, Patsy I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harding, Ruby A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mccarthy, Wilma O</td>
<td></td>
<td>SpO₂ 98 %; HR 67 Bpm</td>
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</tr>
<tr>
<td>Mendoza, Deborah E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathis, Roy I</td>
<td></td>
<td>BP: 126/75 mmHg; HR: 73 Bpm</td>
<td></td>
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<td></td>
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</tbody>
</table>

* indicates Manual Entry
Sustainable Change

Knowledge + Engagement + Support

Knowledge
Phase 1
Monitoring signs and symptoms
Identify resources needed

Engagement
Phase 2
Learn new medical regimen
Medication management; adherence to orders

Behavior Change
Phase 3
Disease process education
Support for changing behavior

Personal Empowerment
Phase 4
Learn and model self-management behaviors
Demonstrate self-monitoring and response
“Education is not a building...it is learning and I’ve learned so much!”

“This program works. I have learned more in this program than I did when I was in a hospital.”

“I never thought to look into my shoes”

“I have learned more in the few months of being in this program than I have in 17 years of having diabetes”
### Mississippi Diabetes Telehealth Network

<table>
<thead>
<tr>
<th>HbA1c</th>
<th>Medication Compliance</th>
<th>Health Session Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.7%</td>
<td>96%</td>
<td>83%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Retinopathy Found</th>
<th>Weight Loss</th>
<th>Miles Saved</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 cases</td>
<td>71 pounds</td>
<td>9,454.11</td>
</tr>
</tbody>
</table>

No Hospitalizations or ER visits for DM

*Preliminary Results on first 100 patients*
How MISSISSIPPI is Leading the Way in INNOVATION

**Problem**
- 13% of adults in Mississippi have diabetes
- Diabetes is the 8th leading cause of death in Mississippi
- 54% of population is in rural areas, where access to care and connectivity is limited

**Solution**
- Mississippi Diabetes Telehealth Network Established
- Designed to measure the impact of connecting rural diabetics to chronic care managers utilizing a remote care management solution

**Outcomes**
- Utilizing the Intel-UK Care Innovations Remote Care Management System
- 1.7% Average A1C reduction
- Zero hospitalizations & ER visits for patients using the system

**Projected Savings**
- Diabetes is responsible for $7,888 excess expenditures per year per person
- 43% of expenses driven by hospital inpatient care
- Health costs are 2.3 times higher than individuals without diabetes
- $339,184 cost savings of the 100 patients enrolled in the MD Diabetes Telehealth Projects
- $189,1MILLION/YEAR Total projected Medicaid savings for State of Mississippi (assumes 20% of diabetics population in MS participates in telehealth program)
Patient Testimony
Virtual Care Command Center

- Telemedicine
- Care Coordination Center
- Transfer Center
- Population Health Management (RPM)
- Virtual Clinics
- Monitoring Center
- Call Center/Scheduling
Virtual Care

The patient will see you now

Saving time and reducing costs.
Smart Care Teams
Integrate Telehealth into health care operations

Develop internal and external strategy

Know your customer and educate/engage

Align Telehealth initiatives with hospital/clinic

Business Plan with measurable outcomes

Alternative financial models to FFS

Strategy to identify/overcome all barriers to full adoption

Partner for robust infrastructure, HIE involvement
Considerations for Sustainability

Financial
• Know your value proposition
• Build a model sustainable in a FFS world while generating outcomes for sustainability in a Value-Based Payment Model

Regulatory
• Lead change in Regulatory Boards (Medical, Nursing, Pharmacy, Dept of Health…)

Statutory
• Create a Legislative strategy for parity reimbursement

Licensure/Credentialing
• Streamline licensure process
• Environment to support delegated credentialing

Education

Connectivity
• Partner for robust infrastructure
• HIE involvement

Advocacy
• Federal & State policy change
• Find a respected telehealth leader
• Develop clinical champions
• Be sure to align with institutional strategy
• Staff with talent and a deep bench to include legal services
• Develop a realistic business plan
• Identify strong state partnerships
• Create reliable training programs for internal and external partners
• Ensure high quality technical support
• The keys to the kingdom reside within the data
• Set up data collection and analytics from the outset
• Remember, It’s always about the patient.
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| Seton Healthcare Family  
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| @kristihenderson  |