Decline of a Telehealth Program and Implications for Sustainability: A Texas Case Study

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WHAT STARTS HERE CHANGES THE WORLD
Chronic Diseases

• Account for 7 in 10 deaths each year

• > 75% of healthcare costs in the US

• 67% of Medicare beneficiaries discharged from hospitals are re-hospitalized or die within first year of discharge
What is home health?

• Transition between discharge from post-acute facilities and complete patient self-care
What is home telehealth (TH)?

- ‘tele’ in Greek – ‘at a distance’
- “Electronic communications and IT to provide and support health care when distance separates the participants.” (IOM 1996)
- Remote exchange of physiological data
How does home telehealth work?

Patient’s home

Home Health Agency

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http://www.telehealth.va.gov/ccht/

WHAT STARTS HERE CHANGES THE WORLD
Need for Telehealth

Healthcare challenges

• ↑ Patients with chronic conditions

• ↑ Aging population

• ↑ Healthcare cost

• ↑ Staff shortages

• ↑ Access inequity geographically & socially
However....

Home telehealth programs suffer from
• Lack of widespread adoption
• Improved chronic disease outcomes is still a ?
• ↑ Dropouts
• Sustainability is a challenge
• Determinants of discontinued or sustained use is ?

Success of TH ➔ serving needs of users
Study Purpose

• Explore initial adoption and the eventual decline of a decade-long home telehealth program at a Texas home health agency (HHA)
Methods

• Qualitative
  – Case study analysis
  – Constant comparative method

• In-depth Interviews
  – 8 HHA nurses & 1 telehealth technician
  – 4 HHA administrators and supervisors
  – 9 Patients and their caregivers (> 55 years)
  – 1 Physician
RESULTS

WHAT STARTS HERE CHANGES THE WORLD
Sample Demographics
(Staff, N = 13)

<table>
<thead>
<tr>
<th>Count</th>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>13/13</td>
<td>100%</td>
<td>Female</td>
</tr>
<tr>
<td>5/13</td>
<td>39%</td>
<td>Ages 51 – 60</td>
</tr>
<tr>
<td>4/13</td>
<td>31%</td>
<td>Hispanic- American</td>
</tr>
<tr>
<td>8/13</td>
<td>61%</td>
<td>White</td>
</tr>
<tr>
<td>9/13</td>
<td>69%</td>
<td>&gt; 20 years nursing experience</td>
</tr>
<tr>
<td>11/13</td>
<td>85%</td>
<td>&gt; 10 year home health experience</td>
</tr>
<tr>
<td>8/13</td>
<td>62%</td>
<td>&gt; 10 years telehealth experience</td>
</tr>
</tbody>
</table>
Sample Demographics (Patients, N = 9)

- 5/9 or 56% > 70 years of age
- 7/9 or 78% Females
- 4/9 or 44% White
- 3/9 or 33% African-American
- 4/9 or 44% Some High School
- 3/9 or 33% Completed College
- 5/9 or 55% Lives alone
- 5/9 or 55% < 6 weeks of telehealth use
Telehealth care model

Centralized model of telehealth

• Patient transmits telehealth data by specified time
• Telehealth nurse reviews patients’ remote vital signs daily
• Contacts the visiting nurse to report abnormal values
• Visiting nurse would then follow-up with patient and / or physician
RESULTS – THEMES

DETERMINANTS OF SUSTAINABILITY OF HOME TELEHEALTH PROGRAMS
Return – on - Investment

• Insurance re-imbursement
• # of Physician referrals
• Nursing caseload
• Updates and maintenance costs
• Data and metrics evaluating effectiveness of telehealth towards reducing hospitalizations
Patient-centered outcomes

- Self-management

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Monitoring</td>
<td>Dependence</td>
</tr>
<tr>
<td>Prompts to monitor</td>
<td>Low HH Length-of-stay</td>
</tr>
<tr>
<td>Early identification of crisis</td>
<td>Low level of self-care</td>
</tr>
</tbody>
</table>

- QOL

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sense of security</td>
<td>Patient Routine</td>
</tr>
<tr>
<td>At-home convenience</td>
<td>Sense of privacy</td>
</tr>
</tbody>
</table>
Communication & Coordination

• Quality of Nurse–Patient Interaction
  – Informed vs Superficial
    • Detect problems with self-management activities - medication non-adherence, diet
  – Impersonal
  – Access (one-touch)

• Patient–Physician Interaction
  – Non - existent
Communication & Coordination

• Quality of Nurse–Physician interaction
  – Redefined roles of Accountability & Responsibility – “Who looks at telehealth data?”
  – Alerts Management
  – Data Presentation
  – Actionable Information
Home health organizational culture

- Duration of Episode of care
- Clinical Champion
- Corporate Buy-in
- Stakeholder input in decision-making
- Training / Orientation / Guidelines
- Inter-agency EHR Interoperability
Patient characteristics

• Psychosocial Characteristics
  – Caregiver support, Motivation level, Anxiety

• Disease Characteristics
  – Stage of disease, Co-morbidities

• Capacity
  – Physical, Cognitive, Health literacy
Usability

- Ease of Use
  - Initial Learning Curve
- Location logistics / Aesthetics
- Fit with patient routine & nurse workflow
- Time-consuming
  - Installation
  - Re-testing
  - De-infestation
- Transmission Issues
Implications for Sustainable Home Telehealth (TH) Programs
In Summary

• Return on investment
• Expectations on patient-centered outcomes
• Healthcare system organization, coordination & collaboration
• Patient characteristics & context
• Usability
Telehealth 2.0

Data Visualization

Communication & Collaboration

Tailored Care plans

Usability

Integration with nursing workflow

WHAT STARTS HERE CHANGES THE WORLD
Conclusion

• Telehealth is just a tool
• ≠ “Plug and play”, ≠ “Magic Wand”
• Telehealth has potential
• We, the users should effectively utilize telehealth
• Implement a system that
  – Considers complexity of human interactions
  – “Meaningful use” of telehealth to improve chronic disease outcomes
Questions???