Architecting the Future
Telebehavioral Health System of Care in the U.S. Army

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Post Traumatic Stress Innovations team
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Agenda

• Study Motivation
  • External context
  • Define ‘telehealth’
• Study Methodology
• Current State of Army Telebehavioral Health (TBH)
• Future State of Army TBH
  • Enterprise requirements
• Extensions outside of the military
  • Healthcare and non-healthcare contexts
Study motivation

Demand for psychological health services has consistently increased

- Military Health System (MHS) has had to adapt to a rise in psychological illnesses that may be related to the effects of ten years of war
  - PTSD has increased by nearly 100% in the total MHS beneficiary population over the past 6 years
  - Pace of deployments has a dramatic impact on the frequency and availability of services for service members and their families
- In 2011, there was an urgency in the various installations to maximize their capacity to meet the increased demand for mental health services

\[\text{MHS Stakeholder Report, 2012}\]

\[\text{Hess, 2012}\]
Study Motivation

Challenges with access to care

Important for all stakeholder groups:

1. Additional services for family members and active duty overflow
2. Remote access for reserve component and national guard
Opportunity: Telehealth
Role of technology as a force extender

• Telehealth has evolved over time in the US Army and is often employed as a force extender to improve efficiency of screenings of service members returning home from OIF and OEF

• Utilizes the existing provider resources and “multiplies” them to maintain continuity of care and potentially contribute to more effective care delivery
  • Examples: psychotherapy, redeployment screenings, medication management

• Furthermore, a policy mandate was deployed to utilize telehealth Army-wide to support mental health related screening of active duty soldiers who were returning from combat deployment.
What is telehealth?

• Telehealth is the use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health and health administration¹.

• Telehealth technologies include videoconferencing, the internet, store-and-forward imaging, streaming media¹

• Telehealth is not a separate medical specialty.

• Due to aging populations and escalating healthcare costs, telehealth has grown by 237% in the last five years²

¹ US Dept of Health and Human Services, ² Kalorama report, 2013
Research Questions

• What are the underlying dynamics governing the evolution of these various telebehavioral health systems?

• What are the key enablers and barriers to implementing telehealth services as part of a larger mental health system of care?
Study Methodology
Engaged Scholarship, Van de Ven

Our approach:
• Work collaboratively with the leadership of the Army to study telehealth evolution as it was happening across the Army, and enable policy-driven improvements to the system of care.
• Utilized Engaged Scholarship (Van de Ven, 2007)
  • Participative form of research for obtaining the different perspectives of key stakeholders in studying complex problems.
  • Input from these stakeholders can be used for problem formulation, as well as collaborative problem solving.
Enterprise views

<table>
<thead>
<tr>
<th>Views</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy</td>
<td>The vision, strategic, goals, and enterprise level metrics</td>
</tr>
<tr>
<td>Policy</td>
<td>The external regulatory, political and societal environments in which the enterprise operates</td>
</tr>
<tr>
<td>Services</td>
<td>The offerings derived from enterprise knowledge, skills, and competencies that deliver value to stakeholders</td>
</tr>
<tr>
<td>Processes</td>
<td>Core, leadership, lifecycle and enabling processes by which the enterprise creates value for its stakeholders</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Systems and information technology, communications, technology, and physical facilities that enable enterprise performance</td>
</tr>
<tr>
<td>Organization</td>
<td>The culture, organizational structure, and underlying social network of the enterprise</td>
</tr>
<tr>
<td>Knowledge</td>
<td>The competencies and explicit and tacit knowledge resident in the enterprise</td>
</tr>
</tbody>
</table>

Enterprise contexts

- Ecosystem: “The exogenous element that is characterized by the external regulatory, political, economic, and societal environment in which the enterprise operates and competes/cooperates with other related enterprises.”
- Stakeholders: “Enterprise stakeholders are individuals or groups who contribute to, benefit from, and/or are affected by the enterprise.”
Enterprise Architecting views helped develop semi-structured interview questions

1. Could you please describe the evolution of telebehavioral health services in your region or organization?
2. What is the portfolio of services that are offered using telehealth services?
3. What standards currently govern telebehavioral health services?
   a. What enterprise-level metrics used to assess telebehavioral health services?
4. What processes are used when a patient uses telebehavioral health services?
5. What infrastructure is currently in place to support telebehavioral health services
   a. How are telebehavioral health encounters accounted for?
   b. How are credentialing and privileging managed for telebehavioral health services?
   c. What are the limitations of existing technology to effectively using telebehavioral health services?
6. What are the enablers and barriers to institutionalizing telebehavioral health as a part of the larger system of care?
Telehealth evolution in the Army enterprise

1992: Army pioneers first portable telehealth system in Somalia

2001: Start of Operation Enduring Freedom

2003: Start of Operation Iraqi Freedom

2004: First army Tele-consultation program connects theater providers with CONUS/OCUNUS

2008: Tele-TBI / Tele-BH VTC network established across MEDCOM

2009-2010: VBH Program pilots at Schofield Barracks and Fort Richardson and rolls out across the Army

2009: Tele-surgical mentoring, transcranial doppler, and mCare cellphone pilots began

2010: AMEDD Telehealth Office was established to coordinate telehealth within HP&S: initial focus on BH/mTBI


Adapted from ATA Presentation, Dr. Rye, June 2011
Five Regional Medical Commands (RMCs)

~55,000 telehealth encounters in garrison (APR11 – APR12)
~70 telehealth sites in garrison

WRMC:
13 sites
7,438 encounters

NRMC:
16 sites
34,041 encounters

ERMC:
20 sites
1,150 encounters

PRMC:
11 sites
7,733 encounters

SRMC:
14 sites
11,208 encounters

Hub
Army spoke
Non-Army spoke

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# Evolution of telehealth across regions

*Army telehealth primarily grew to support local needs*

<table>
<thead>
<tr>
<th>Region</th>
<th>Delivery Architecture</th>
<th>2011 TBH/Total Telehealth Encounters</th>
<th>Sites</th>
<th>Telehealth Personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Modified Hub &amp; Spoke</td>
<td>24,838 encounters (18,788 TBH)</td>
<td>16</td>
<td>91</td>
</tr>
<tr>
<td>B</td>
<td>Distributed Hub &amp; Spoke</td>
<td>1,088 encounters (524 TBH)</td>
<td>20</td>
<td>8</td>
</tr>
<tr>
<td>C</td>
<td>Hub &amp; Spoke (large hub &amp; small hub)</td>
<td>6,117 encounters (3,947 TBH)</td>
<td>14</td>
<td>29</td>
</tr>
<tr>
<td>D</td>
<td>Hub &amp; Spoke</td>
<td>5,326 encounters (5,052 TBH)</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>E</td>
<td>Hub &amp; Spoke</td>
<td>4,961 encounters (2,959 TBH)</td>
<td>11</td>
<td>30</td>
</tr>
</tbody>
</table>

**Telehealth Motivation**

- “Hospital starting sending everything to us”
- “augmented BH at each site”
- “started off as a feasibility project... proof of concept”
- “18,000 soldiers were redeploying to one location. They all needed to have a BH screening.”
- “all patients previously needing specialty care required air transportation...”
Telehealth Services

*Breadth of telehealth services has evolved quickly*

- 70% of telehealth encounters are BH in nature
  - TBH has grown by roughly 60% in recent years
  - 246% growth in encounter volume since January 2010

- Currently, no sanctioned in-home telehealth services
  - US Army Medical Info Tech Center (USAMITC) has the infrastructure to support
  - Some issues to consider: AHLTA access, firewalls, cred/privileging, and clinical process measures such as safety procedures
  - Randomized Control Trial in the works by the DoD T2 agency

<table>
<thead>
<tr>
<th>Modalities</th>
<th>Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care Delivery</td>
<td>Medication management, psychotherapy, psychiatry, case management, social services, Warrior Transition Battalion services</td>
</tr>
<tr>
<td>Screening</td>
<td>Soldier Readiness Processing (SRP) and reverse SRP evaluations</td>
</tr>
<tr>
<td>Assessments</td>
<td>Disability evaluations (MEBs), military readiness, forensics and security</td>
</tr>
</tbody>
</table>
Enterprise metrics were not measured consistently across RMCs

<table>
<thead>
<tr>
<th>Region 1</th>
<th>Region 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Encounters per Pt.</strong></td>
<td><strong>Frequency</strong></td>
</tr>
<tr>
<td>1</td>
<td>3,547</td>
</tr>
<tr>
<td>2</td>
<td>104</td>
</tr>
<tr>
<td>3</td>
<td>26</td>
</tr>
<tr>
<td>4</td>
<td>16</td>
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<td>5</td>
<td>5</td>
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<tr>
<td>6</td>
<td>3</td>
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<td>7</td>
<td>1</td>
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<td>8</td>
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<td>9</td>
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<td>19</td>
<td>-</td>
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<tr>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td><strong>More</strong></td>
<td>-</td>
</tr>
</tbody>
</table>

Consistent
- Encounter volume across regions & facilities
- No-show rates

Not consistent
- Nomenclature of services
- Patient and providers satisfaction surveys
- MEPRS codes
- GT/GQ modifiers
## TBH Process

Variations across RMCs, especially surrounding administrative duties

<table>
<thead>
<tr>
<th>Pre-TBH Encounter (Scheduling the Encounter)</th>
<th>Pre-TBH Encounter (Pt on-site)</th>
<th>TBH Encounter</th>
<th>Post - TBH Encounter</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MSA/Coordinator</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Origin site contacts hub site to schedule patient</td>
<td>Origin site schedules apt. in CHCS</td>
<td>Origin site schedules apt. in provider calendar</td>
<td>Check-in Patient at Origin Site</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pre-TBH Encounter (Pt on-site)</th>
<th>TBH Encounter</th>
<th>Post - TBH Encounter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logs out of Platform and into Remote Site Platform</td>
<td>Reviews Patient AHTLA Record</td>
<td>Logs into VER</td>
</tr>
</tbody>
</table>

| Provider | | |
|----------|-----------------|
|          |                  |                  |                      |

| Patient | | |
|---------|-----------------|
|         |                  |                  |                      |

| Patient Presenter | | |
|------------------|-----------------|
| Denotes variation across RMCs | |

| **Patient Presenter** | | |
|-----------------------|-----------------|
|                      |                  |                  |                      |

| Enabling Infrastructure: CHCS, AHTLA, DEERs, Training, Video Network Center, MOVI Tanbergs, HIPAA-Compliant Space | | |
Enabling infrastructure varies across RMCs

• **Workload Accounting and Coding**: Difficulties with data quality associated with inaccurate accounting of services; Lack of TBH MEPERs code

• **Credentialing/Privileging**: Obtaining privileges is cumbersome, inefficient, and not standardized across all facilities

• **Health IT and Scheduling System**: Scheduling and updating AHLTA (DoD’s Health IT system) within the 72 hour window is difficult across the enterprise due to challenges with getting access across platforms.

• **Prescriptions**: Submitting prescriptions across facilities and platforms is difficult because each pharmacy has a different process and often takes place through faxes

• **MOVI/Jabbers**: Providers need to ensure equipment is interoperable with equipment across the enterprise by working with USAMITC. Long procurement timeframes.
Enterprise-wide scheduling system was mentioned specifically as one solution to this scenario.
Tension surrounding matching local need for flexibility with global need for standardization

Current policy flow:

1. Congress
2. DoD
3. Army
4. MEDCOM

Army RMCs
- “Maximize the existing Tele-Health resources to support their mission”
- “Implement a responsive and fully integrated telehealth program that operates as a routine component of the health care delivery system.”
- “Getting 24/7 coverage for service members in the region”
- “Improving quality, cost effectiveness, and coordination through the efficient use of TBH”
- “Providing BH services to remote areas or where demands are not met.”

Barriers in 2012
- Time lag associated with policy from Congress > DoD > Army > MEDCOM (ex: STEP Act)
- Policies not adapting with evolving technologies creates workarounds
- Translating policy at the regional level
- Implementation of programs prior to policies
- Encouraging provider adoption/compliance

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• Designed workshop based on Van de Ven and Delbecq (1971) process for policy planning

• Held on campus with 20 enterprise stakeholders from RMCs, Army Medical Command office (policy), technological infrastructure, Behavioral Health enterprise, National Guard/Reserve Component

• Utilized enterprise views as lenses to frame and support discussions to develop recommendations
Underlying theory: technological adoption & diffusion

Source: Griliches, 1960
Other influencers: Mansfield, Rogers
Key enabler: Army telehealth office is able to serve as the “locus” of innovation to leverage efforts established by one region and scale it across the entire enterprise.
1. MEDCOM shall establish a core funding stream as a line item to support TH service line.

2. MEDCOM Telehealth Service line shall develop standard TBH metrics for deployment across the enterprise.

3. MEDCOM Telehealth Service line shall identify eligible populations across the enterprise that could benefit from the expanded access that TBH services provide.

4. MEDCOM Telehealth Service line shall develop an enterprise solution that supports seamless flow of operational information and the electronic health record.

5. MEDCOM Telehealth Service line shall revisit specific policies that are presenting barriers to telehealth growth and sustainability.

6. MEDCOM Telehealth Service line shall encourage learning and best practice sharing across the Army TH enterprise.

7. MEDCOM Telehealth Service line shall collaborate with other Army governance organizations to develop a mobile health strategy and pilot projects for the Army enterprise.
Opportunity for US Healthcare Transformation

Health Delivery System Transformation Critical Path

Acute Care System 1.0
- Episodic Health Care
- Lack integrated care networks
- Lack quality & cost performance
- Transparency
- Poorly coordinate Chronic Care Management

Coordinated Seamless Healthcare System 2.0
- Patient/Person Centered
- Transparent Cost and Quality Performance
- Accountable Provider Networks Designed Around the patient
- Shared Financial Risk
- HIT integrated
- Focus on care management, prevention

Outcome Accountable Care

Community Integrated Healthcare System 3.0
- Healthy Population Centered
- Population Health Focused Strategies
- Integrated networks linked to community resources capable of addressing psychosocial/economic needs
- Population based reimbursement
- Learning Organization: capable of rapid deployment of best practices
- Community Health Integrated
- E-health / telehealth capable

Source: William Kassler, Chief Medical Officer of the New England Region of Center for Medicare and Medicaid Services
Translations to your work

- Engaged scholarship approach allows you to:
  - Obtain input from these stakeholders for problem formulation
  - Develop a shared path forward and influence policy through collaborative problem solving

- Utilizing enterprise architecting lenses to breakdown complexity in enterprise transformation efforts

- Identifying local innovations to scale across the enterprise, while ensuring flexibility based on needs of individual sites
  - Focus on scaling best practices that help provide an enabling infrastructure to improve effectiveness across the network and create a consistent experience for “users” across your enterprise
Acknowledgements

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