The telehealth promise
Better health care and cost savings for the 21st century

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The University of Texas Medical Branch
Galveston, Texas

May 2008
• UTMB
• How the study came about with CITL
• Results
• Current Challenges
• Recommendations
Background

Over 15 years of providing telemedicine programs

- Rural health
- Special needs
- Aerospace medicine
- Offshore industries
- Polar research stations
- Employee health
- Correctional telemedicine
Background

Telemedicine Locations
• Health care outsourced to University of Texas Medical Branch (UTMB) and Texas Tech University
• UTMB operates enterprise-wide EMR
• TM taken into every location in 2000
• TM is integral in system-wide care plan
• Use of TM is not discretionary
• Over 250,000 correctional telemedicine encounters (close to 345,000 telemedicine encounters total)
Hersh 2001 and 2006

- The number of telehealth programs is growing
- Evidence of their cost-efficiency is insufficient to make definitive statements supporting the use of telemedicine
- Key deficiencies include studies with small sample sizes and poor research methodologies

Purpose of the Study - Center for Information Technology Leadership (CITL)

- To study where value has been found in the literature, and to project that value to a national scenario
- Remove the lack of a value proposition as a barrier to adoption
- Encourage decision makers to consider telehealth technologies
Scope

Scope of the Study

• Telehealth encounters with providers at both ends
• Clinical encounters
• Utilization based

Beyond the Scope of the Study

• Patient monitoring at home
• Telepsychiatry if there is only one provider involved
• Medical education
• Interpretative services: teleradiology and telepathology
• Satisfaction, quality, and equivalence were not modeled
Major Findings

Net Value

National Annual Cost and Benefit Cashflow (Hybrid)

From: Center for Information Technology Leadership. The Value of Provider-to-Provider Telehealth Technologies. 2007. Charlestown, MA.
Major Findings

Annual Savings in National Hybrid Deployment Scenario

“From the prospective of the healthcare system, the cost to equip all US emergency departments with telehealth technologies could easily be covered by savings from a reduction in transfers between emergency departments.”

From: Center for Information Technology Leadership. The Value of Provider-to-Provider Telehealth Technologies. 2007. Charlestown, MA.
Major Findings

Transfers from Emergency Dept. to Emergency Dept.

- Baseline transport estimated at 2.2 million per year
- Up to 50% of the 4,500 EDs have difficulty providing at least one type of physician specialty for consultation
- Imperative in situations, such as stroke, where rapid diagnosis and treatment is linked to outcomes
- Annual ED to ED transports estimated at $1.39 billion
- Telehealth sources of benefit
  - Avoided ambulance transport

<table>
<thead>
<tr>
<th></th>
<th>Store-and-Forward (Level IIa)</th>
<th>Real-Time Video (Level IIb)</th>
<th>Hybrid (Level III)</th>
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<tbody>
<tr>
<td>Baseline Transports ED to ED</td>
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<td>2,204,320</td>
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<td>Pre-Telehealth Transport Cost</td>
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<td>Annual Telehealth Savings</td>
<td>N/A</td>
<td>$408,000,000</td>
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From: Center for Information Technology Leadership. The Value of Provider-to-Provider Telehealth Technologies. 2007. Charlestown, MA.
Major Findings

Nursing Facilities

“From the perspective of the healthcare system, the costs of implementing telehealth equipment in nursing homes could be covered by savings from a reduction in transferring residents to emergency departments and physician offices, and by avoiding the costs of the emergency department visit itself.”

From: Center for Information Technology Leadership. The Value of Provider-to-Provider Telehealth Technologies. 2007. Charlestown, MA.
Transfers from Nursing Facilities to Emergency Dept.

- Baseline transport estimated at 2.7 million per year
- Annual costs estimated at $3.62 billion
- Telehealth sources of benefit
  - Avoided ambulance transport
  - Avoided emergency department visit

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<td>Baseline Transport NF to ED</td>
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<td>Pre-Telehealth Transport and Visit Cost</td>
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<td>Avoided Visits from NF to ED</td>
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<td>Annual Telehealth Savings</td>
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</table>

Major Findings

Transfers from Nursing Facilities to Physician Offices

- Baseline transport estimated at 10.1 million per year
- Annual costs estimated at $1.29 billion
- Telehealth sources of benefit
  - Avoided van transport
  - Avoided face-to-face visit

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<td>Pre-Telehealth Transport and Visit Cost</td>
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</table>

Provider to Provider Consultations

“There is a loss to the system from teleconsults with real-time video and hybrid technologies when considering only professional fees. These losses could be far outweighed in the hybrid scenario by involving specialists early in the care of a patient and reducing the number of redundant or unnecessary tests.”

From: Center for Information Technology Leadership. The Value of Provider-to-Provider Telehealth Technologies. 2007. Charlestown, MA.
Major Findings

Provider to Provider Consultations

- 142 million annual outpatient referrals
  - $17 billion in Face-to-Face Visit Costs
- Redundant and Unnecessary Test
  - $11.6 billion
- Telehealth sources of benefit
  - Avoided face-to-face visit
  - Avoided Redundant and Unnecessary Tests

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<td>Total Pre-Telehealth Costs</td>
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<td>Annual Savings from</td>
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<td>Avoided Face-to-Face Visits</td>
<td>$468,000,000</td>
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<td>($1,620,000,000)</td>
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<tr>
<td>Annual Savings from</td>
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<td>Avoided Redundant &amp; Unnecessary Tests</td>
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<td>Total Annual Telehealth Savings</td>
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<td>($709,000,000)</td>
<td>$3,610,000,000</td>
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</table>

“Correctional facilities could cover their costs of telehealth equipment by savings from a reduction in transporting patients to emergency departments and to physician offices, and by avoiding the costs of the emergency department visit itself.”

From: Center for Information Technology Leadership. The Value of Provider-to-Provider Telehealth Technologies. 2007. Charlestown, MA.
Major Findings

Transfers from Correctional Facilities to Emergency Dept.

- Baseline transport estimated at 94.2 thousand per year
- Annual costs estimated at $158 million
- Telehealth sources of benefit
  - Avoided ambulance transport
  - Cost of security
  - Avoided emergency department visit

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<td>Baseline Transport CF to ED</td>
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<td>Pre-Telehealth Transport and Visit Cost</td>
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<td>$158,000,000</td>
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<td>Avoided Visits from CF to ED</td>
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<td>39,900</td>
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<td>Annual Telehealth Savings</td>
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<td>$51,700,000</td>
<td>$60,300,000</td>
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</table>

From: Center for Information Technology Leadership. The Value of Provider-to-Provider Telehealth Technologies. 2007. Charlestown, MA.
Major Findings

Transfers from Correctional Facilities to Emergency Dept.

From: UTMB Correctional Managed Care, September 05 to June 06
Major Findings

Transfers from Correctional Facilities to Physician Offices

- Baseline transport estimated at 691 thousand per year
- Annual costs estimated at $302 million
- Telehealth sources of benefit
  - Avoided van transport
  - Cost of security
  - Avoided face-to-face visit

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<td>691,000</td>
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<tr>
<td>Pre-Telehealth Transport and Visit Cost</td>
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<tr>
<td>Avoided Visits from CF to ED</td>
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<td>$162,000,000</td>
<td>$171,000,000</td>
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</table>

Summary of Findings

• Overall, the benefits far outweigh the costs of these systems to implement.
• Hybrid technologies projected to be the most cost-effective system.
• Sites with existing real-time video capabilities can upgrade to hybrid with minimal costs and reap significant benefits

Limitations of the Study

• Modeling non-specific specialty care may have under/overestimated results
• Modeling future state where barriers do not exist may overestimate results
• Limiting analysis to provider-to-provider encounters underestimates value of complete telehealth programs
• Current reimbursement model that favors physical, in-person visits
  • Reimbursement favors only rural areas
    • What about the urban underserved?

• A lack of cross-state licensure
Policy Recommendations

• Establish parity in reimbursements for telehealth with face-to-face

• Review of the medical licensing system to determine whether adjustments are necessary to eliminate barriers that will slow the adoption of telehealth
  • Will be difficult due to states’ rights issues, local control and local standard of care

• Encourage health-related IT infrastructure that will facilitate and support telehealth and complementary services

• Initial steps to eliminate the digital divide
  • In early 20th century, government support for electrification and telephone national distribution
    • “right” for every household to have economical access to power and communication
  • Today, population that is highest need of advanced health technologies is least connected
    • Age 60 and older
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Full Report Available via:

- AT&T Center (http://attcenter.utmb.edu)
- CITL (www.citl.org)
- ATA (http://www.atmeda.org/)
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