Telepsychiatry for Vulnerable and Underserved Populations

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Who are Underserved or Vulnerable?

- Rural
  - I mean really rural
- Poor
  - I mean really poor
- Inner city
- Of color
  - Any color
- The very old or very young
- Those who are physically challenged
- Those who are mentally ill
Collaborators
UVM Medical Center Telemedicine Team

- Judy Amour, Projects and Grants Administrator
- Harry Clark, Telemedicine Coordinator
- Tara Pacy, Operations Director
- Terry Rabinowitz, Medical Director
- Mike Wehner, Manager
Away Team

• MCD Public Health
  • Danielle Louder
  • Andrew Solomon
  • Allen-Laney

• RMCL
  • Michael Edwards
Telemedicine at the University of Vermont Medical Center
History

- Began mid-90s
- Mike Ricci, first Medical Director
  - Major growth through grants, recruitment, word of mouth
- TR succeeds MR in 2005
  - Three OAT grants to develop Northeast Telehealth Resource Center (NETRC)
  - Continued growth of pediatric critical care and NH telepsychiatry; implementation of palliative care, MFM, telederm, teleneuro, teleortho
- Research collaborations with Brown and Cornell; Sherbrooke, QC
• Network links 16 hospitals and three nursing homes in VT and NY
• Delivers distance education (e.g., Grand Rounds), facilitates administrative contacts, and delivers tele-consultations in pediatric critical care, psychiatry (NH, child and adolescent), palliative care, maternal and fetal medicine, wound care, and other areas as requested/needed
• Research collaboration
  • Nursing home telepsychiatry, PTSD treatment for veterans and trauma responders, palliative care, homebound elders
An act relating to telemedicine

It is hereby enacted by the General Assembly of the State of Vermont: Sec. 1. 8 V.S.A. chapter 107, subchapter 14 is added to read:

Subchapter 14. Telemedicine

§ 4100k. COVERAGE FOR TELEMEDICINE SERVICES

(a) All health insurance plans in this state shall provide coverage for telemedicine services delivered to a patient in a health care facility to the same extent that the services would be covered if they were provided through in-person consultation.
About Us

NORTHEAST TELEHEALTH
RESOURCE CENTER

www.netrc.org

MCD Public Health
Insight Innovation Impact

www.mcdph.org

The University of Vermont Medical Center

www.uvmhealth.org
<table>
<thead>
<tr>
<th>Who do we serve?</th>
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<tbody>
<tr>
<td>✓ Individual Providers</td>
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<td>✓ Community &amp; Urban Hospitals</td>
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<tr>
<td>✓ Academic Institutions</td>
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<tr>
<td>✓ National, State, or Regional Associations</td>
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<td>✓ Federal, State, Regional, or Local Government Agencies</td>
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<td>✓ Legislators/Policy makers</td>
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<tr>
<td>✓ Health Systems</td>
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<tr>
<td>✓ Rural Clinics</td>
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<td>✓ Federally-Qualified Health Centers (FQHC)</td>
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<tr>
<td>✓ Critical Access Hospitals (CAH)</td>
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<tr>
<td>✓ Primary Care Clinics</td>
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<tr>
<td>✓ Ambulatory Care Centers</td>
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<tr>
<td>✓ Nursing Homes</td>
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<tr>
<td>✓ Schools</td>
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<tr>
<td>✓ Vendors</td>
</tr>
<tr>
<td>✓ <em>and many others!</em></td>
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</tbody>
</table>
We provide:

- Short and long term technical assistance services for organizations
- Education for the telehealth workforce
- Access to educational materials
- Access to specialized tools + templates
- Access to telehealth experts willing to share their experiences
- Monthly newsletter updates and other alerts on telehealth in the northeast
- Support for collaboration that fosters a favorable environment for telehealth
- And more!
Save the Date!

Northeast Regional Telehealth Conference

May 23-24, 2017
Amherst, MA

Join us for hands-on workshops, nationally recognized plenary speakers, a variety of breakout sessions featuring regional programs, and lots of networking opportunities!

For more info: www.netrc.org/conference
Rural Elders & Mental Illness
Living in the Country

- People in rural areas of the US have much less access to medical care of all types compared to those in urban areas.

- Some medical conditions may make it difficult or impossible for affected individuals to receive necessary services because they may be unable to come for appointments or to participate in their care as required.

- Few providers are willing/able to spend uncompensated time in travel and few patients with significant medical comorbidity are able to make long trips without costly assistance and a significant investment in time.
There are higher proportions of rural men who smoke, have hypertension, and impaired renal function, and of rural women with obesity, hypertension, diabetes, and renal impairment, compared to urban residents.
While the prevalence and incidence of mental disorders is similar between rural and urban residents, compared to their urban counterparts, rural residents comprise an underserved and vulnerable population.
Rural Folks

- Are far less likely to have access to mental health care providers or services or to have mental health benefits
- Use fewer psychiatry services
- Have higher suicide rates
Mental Illness

- Leads to significant individual and family burden
- More use of health care resources
- Increased mortality from comorbid medical illness and from suicide
- Underrecognized and undertreated
  - Especially in hospitals and nursing homes
- Often missed or taken as a normal part of aging
  - “You’re old, you should be depressed.”
Prevalence rates in men and women become comparable after the age of 55-65 (men increase, women level off)

The frequency with which people with depression seek treatment declines sharply after age 55
Elders Not Seeking Help

• Symptoms inappropriately attributed to declining physical health

• Embarrassment about having psychological complaints

• Assumption that depression is a normal part of aging

• Trouble distinguishing between grief and “real” depression
Depression in the Elderly: Selected Populations

- Ambulatory Medical Care Setting
  - 30-50% will have significant depressive symptoms

- Long-Term Care (i.e., NH) Setting
  - 25% of the best functioning residents have symptoms consistent with a major depression
    - Those with cognitive impairment may be even worse because they can’t easily report symptoms

- Don’t forget about caregiver stress, depression, etc.!
Associated Problems

- High rates of functional, cognitive, and behavioral impairment
- Worse health outcomes
- Increased hospital use
- High mortality (illness; suicide)
US Nursing Home Facts
[http://www.cdc.gov/nchs/fastats/nursingh.htm]

- Number of nursing homes: 16,100
- Number of beds: 1.7 million
- Occupancy rate: 86%
- Number of current residents: 1.5 million
- Average length of time since admission (current residents): 835 days
Among more than 1.7 million residents of US nursing homes:

- 80+% have psychiatric disorders or conditions
  - Depression, dementia and associated behavioral symptoms, delirium, anxiety, psychosis, sleep disorders
  - In addition, many have comorbid non-psychiatric conditions that create a “vicious cycle”
Unmet Needs

- Only 20% of residents with mental health symptoms are evaluated by a MH specialist
  - Limited availability of psychiatrists
  - Worse in rural areas

- Although best practice guidelines are available, they are often difficult to implement in NHs
• NH caregivers often can’t/don’t recognize or treat depression, delirium, disruptive behaviors
  • Myths
    • Depression = “normal” in old age
    • More confusion = worsening dementia
  • Lack of training; poor staffing patterns; high staff turnover
  • High prevalence of dementia
  • Medical comorbidity
Challenges

- NHs in rural VT and NY
  - Facilities unable to comply with federal mandates re: resident access to psychiatric consultation and treatment
• Site visits to determine best locations/greatest needs for consultations
• Data ports available in multiple locations
  • Hospitals, EDs, NHs, MICUs, etc.
• I decide to consult to NHs because...
• I was already involved in NH research and treat elders both in and out of hospital
• NH residents are underserved, etc., etc.
• I like this population!
Cut the red tape
  • NYS license
  • NH credentialing
  • Insurance
  • Wait, wait, wait
• Videoconference with key NH personnel to discuss action plan
  • Use MDS as standard assessment instrument
    • Mandated by CMS for all NH residents
    • Initial and quarterly assessments by staff
    • Queries key domains pertinent to elder care
      • ADLs, mood, cognition, delirium, behavior
      • >300 items
    • Multiple embedded validated scales
      • e.g., DRS (Depression Rating Scale), CPS (Cognitive Performance Scale)
Prior to consultation I review:
  - Admission and most recent quarterly MDS
  - ID potential problems and strengths
    - Review embedded scales (e.g., DRS, CPS, etc.)
  - Current medication and clinical problem lists
  - Most recent clinical notes from consultee and others
At Consultation

- RN familiar with resident \textit{and} MDS
  - Prior to evaluation: provides case synopsis to MD
  - During: facilitates consultation with elder
  - Follow-up: discusses care approaches with MD
- Social worker (almost 100%)
- Family members encouraged to attend
Assessments:

- Complete psychiatric assessment
- MMSE – 90%
  - RN assists e.g., holds up command, draws design to copy, repeats/speaks loudly if needed
- Supplemental studies prn, e.g., drawing, vision, organization, hearing, sequencing, concentration
Consultation note by psychiatrist
  • Copies to consultee, RN, and resident’s chart
rn gives verbal RXs to consultee
  • RXs can be implemented ASAP
regular follow-up visits for each resident as indicated
  • MDS data reviewed at each follow-up
Equipment
• Can share these recordings with others for second opinions, teaching, and to show potential users the technique
• Has led to more widespread use of the technology and better acceptance
• Nicely illustrates certain conditions
• Can be viewed as often as needed/desired/indicated
Results for 106 NH Residents
Characteristics

- Average age 77.5 ±13.6 years
- 60% female
- Depression, dementia, and delirium each comprised 21% of diagnoses
- Adjustment disorders in 12.5%
- Behavioral disturbances in 17%
  - Exacerbated by vision and hearing problems
## Patient, Nursing Home, Encounter and Charge Characteristics

### Patients

<table>
<thead>
<tr>
<th>Sex</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>63</td>
<td>59.4%</td>
</tr>
<tr>
<td>M</td>
<td>43</td>
<td>40.6%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age (yrs)</th>
<th>Mean (SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>77.5 (13.6)</td>
<td>44-100</td>
</tr>
<tr>
<td>Median</td>
<td>81</td>
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### Nursing Homes

<table>
<thead>
<tr>
<th>Distance (mi)/Travel time (min) (round trip)</th>
<th>NY</th>
<th>VT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>208/240</td>
<td>70/88</td>
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</table>

### Encounters

<table>
<thead>
<tr>
<th>Total</th>
<th>278</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean encounters per patient (SD)/Range</td>
<td>2.6 (2.0)/1-10</td>
</tr>
<tr>
<td>Per year (last 7 years)</td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td>45.6 (12.8)</td>
</tr>
<tr>
<td>Per Site</td>
<td>NY</td>
</tr>
<tr>
<td></td>
<td>172</td>
</tr>
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</table>

### Charges (USD)

<table>
<thead>
<tr>
<th>Total</th>
<th>65,982</th>
</tr>
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<tbody>
<tr>
<td>Mean (SD)</td>
<td>237 (99)</td>
</tr>
<tr>
<td>Range</td>
<td>100-517</td>
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</tbody>
</table>
## Cost (USD) and Time Estimates for Face-to-Face and Telepsychiatry Services for 278 Encounters for 106 Nursing Home Residents

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
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<tbody>
<tr>
<td><strong>Travel Time (hr)</strong></td>
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<tr>
<td>Yearly</td>
<td>28</td>
<td>106</td>
<td>154</td>
<td>177</td>
<td>133</td>
<td>134</td>
<td>111</td>
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<tr>
<td>Total</td>
<td><strong>843 (35.1 days)</strong></td>
<td></td>
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<tr>
<td><strong>Travel Distance (mi)</strong></td>
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<tr>
<td>Yearly</td>
<td>1456</td>
<td>5480</td>
<td>7976</td>
<td>9034</td>
<td>6806</td>
<td>6812</td>
<td>5632</td>
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<tr>
<td>Total</td>
<td><strong>43,196</strong></td>
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<tr>
<td><strong>Fuel costs</strong></td>
<td></td>
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<tr>
<td>Yearly</td>
<td>73</td>
<td>286</td>
<td>526</td>
<td>709</td>
<td>691</td>
<td>684</td>
<td>778</td>
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<tr>
<td>Total</td>
<td><strong>3,747</strong></td>
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<tr>
<td><strong>Range of personnel costs</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Patient-to-physician travel</td>
<td><strong>33,739-67,477</strong></td>
<td></td>
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<tr>
<td>Physician-to-patient travel</td>
<td><strong>84,347-253,040</strong></td>
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<tr>
<td><strong>Telepsychiatry costs</strong></td>
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<tr>
<td>Videoconference unit, line charges, hardware, service contract</td>
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<tr>
<td>NY</td>
<td>14,045</td>
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<tr>
<td>VT</td>
<td>10,381</td>
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<tr>
<td>Total</td>
<td><strong>24,426</strong></td>
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<tr>
<td><strong>Range of total potential cost savings</strong></td>
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<tr>
<td>Patient-to-physician travel</td>
<td><strong>13,060-46,798</strong></td>
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<tr>
<td>Physician-to-patient travel</td>
<td><strong>63,668-232,361</strong></td>
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Nice Outcomes!

• You can diagnose and treat delirium, depression, and disruptive behaviors from a distance!
  • ...and they get better!
• Residents, many of whom are demented, accept the modality and understand it
  • “It’s pretty cool.” “It saves you a trip, Doctor.”
• Family and staff really like it
Observations

- MDS data reviewed prior to each visit provide a “common language” for MD and RN to facilitate communication and enhance and expedite patient care
  - Enables longitudinal tracking of items that “point” toward a particular problem
  - Improvement or worsening of symptoms can be documented
  - New problems are easily identified
Telepsychiatry consultations for nursing home residents save time, money, and provide a service that might not otherwise be available.
Nice!
• Findings published 2010: J Telemed e-Health
• “Quality Improvement Methods in Geriatric Mental Health: Using Telemedicine to Improve Depression Care Management in Homecare”
• Co-I (T Sheeran, PhD, PI; K01 MH073783), Weill Cornell Medical College
• Published online ahead of print in J Telemed e-Health: Sheeran, Rabinowitz, Lotterman et al. Feasibility and Impact of Telemonitor-Based Depression Care Management for Geriatric Homecare Patients
• Use of Telemedicine to Treat Veterans and Other Exposed Responders with PTSD in Rural Vermont
  • Mentor for M. Olden, PhD, CTSC TL1 Training Award from Weill Cornell Medical College
• Funding from OAT for TRC with Medical Care Development, Inc. of Maine
What’s Possible with Videoconference that’s not Possible FTF?
• No “operator contamination”
  • Less disruption of the clinical environment
  • Patient can be more “normal”
Ability to PTZ without distraction allows:

- Close-up of face, hands, eyes, mouth, etc.
- Can see “affective changes” more easily and/or sooner than FTF
- Tears forming/held back, hand-wringing
- Getting closer to patient than would be appropriate FTF
- “Quiet” look at family, staff, others in room, for responses to questions and patient’s behavior
- Very helpful with family of patients with AD
• Allows some “distance”
  • Helpful for paranoid, shy, trauma survivor, avoidant, psychotic/delusional patients to feel safer; farther “away”
  • Helpful for clinician to be safer when dealing with threatening or antisocial types
Some Other Telepsychiatry Applications

- Telepsychiatry for Snowbirds
- Cyber CF
- Store and Forward
- “Found in Translation”
- “Training the Trainer”
When Thinking About How to Get Mental Health (and other) Services to Those in Need...
Think Inside the Box!