TELE-HEALTH IN VA SPECIALTY CARE

Peter Kaboli, MD, MS
Center for Comprehensive Access & Delivery Research and Evaluation (CADRE), Iowa City VA Healthcare System
Professor, Internal Medicine, University of Iowa Carver College of Medicine
Chief of Medicine, Iowa City VA Healthcare System
Iowa City, IA
Objectives

1. Perspective of clinical leadership
2. Review research in use of tele-health for specialty care
2. Outline future research areas
Access to Care represents the potential ease of having virtual or face-to-face interactions with a broad array of healthcare providers including clinicians, caregivers, peers, and computer applications.

- **Actual**: represents those directly-observable and objectively measurable dimensions of access.
- **Perceived**: represents those self-reported and subjective dimensions of access.
Framework/Model for Access

- Set of specific dimensions that characterize the fit between the patient and the healthcare system.
- Actual and Perceived
- Dimensions:
  - Geographical
  - Temporal
  - Financial
  - Cultural
  - Digital
Tele-Health in Specialty Medicine: View from a Chief of Medicine

- Access, Access, Access
  - Is there a clinic with 30-day access problem?

- Clinical Champions to Lead
  - Tele-HIV, -ICU, -Cardiac Rehab
    - [Tele-Derm, Neurology/MS, SCAN-ECHO]

- Space and Bandwidth
  - CBOC to CBOC limitation for CVT

- Equipment/Approvals
  - Always a risk when depending upon IT
Examples: Specialty Tele-Health

1. HIV Care
2. Cardiac Rehab
3. Tele-ICU
Rural HIV Care

Mixed-Methods Evaluation of a Telehealth Collaborative Care Program for Persons with HIV Infection in a Rural Setting

Michael Ohl, MD, MSPH\textsuperscript{1,2,3}, Dena Dillon, PharmD\textsuperscript{1,2,3}, Jane Moeckli, PhD\textsuperscript{1,2}, Sarah Ono, PhD\textsuperscript{1,2}, Nancee Waterbury, PharmD\textsuperscript{4}, Jo Sissel, RN\textsuperscript{4}, Jun Yin, MS\textsuperscript{5}, Brian Neil, MD\textsuperscript{6}, Bonnie Wakefield, RN, PhD\textsuperscript{1,2,7}, and Peter Kaboli, MD, MS\textsuperscript{1,2,3}

\textsuperscript{1}VA Office of Rural Health (ORH), Veterans Rural Health Resource Center—Central Region, Iowa City VA Medical Center, Iowa City, IA, USA; \textsuperscript{2}Center for Comprehensive Access and Delivery Research and Evaluation (CADRE), Iowa City VA Medical Center, Iowa City, IA, USA; \textsuperscript{3}Department of

Rural Residence Is Associated With Delayed Care Entry and Increased Mortality Among Veterans With Human Immunodeficiency Virus Infection

Michael Ohl, MD, MSPH,\textsuperscript{*††} Janet Tate, MPH,\textsuperscript{§} Mona Duggal, MD, MHS,\textsuperscript{§§} Melissa Skanderson, MSW,\textsuperscript{§} Matthew Scotch, PhD, MPH,\textsuperscript{‖} Peter Kaboli, MD, MS,\textsuperscript{*††} Mary Vaughan-Sarrazin, PhD,\textsuperscript{*††} and Amy Justice, MD, PhD\textsuperscript{§§**††}

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Why HIV Care for Tele-Health?

- VA largest provider of HIV care in US (~24,000)
  - 12-18% with HIV live in rural areas
- Identified a need
  - Quality gap in care
  - Travel burden to drive to HIV specialty clinic when closer clinic with tele-health capability
- Establish trusting relationships between specialty and primary clinic teams
- Create communities of practice around specific patient populations
Telehealth Collaborative Care

- **Primary Care**
  - Provider
  - Clinical Telehealth Technician
  - RN Care Manager

- **HIV Clinic**
  - Provider
  - Pharmacist
  - Psychologist
  - RN Care Manager

- **Veteran**

  - Face-to-face visits
  - Clinical Video Telehealth
  - CPRS Telephone

- **Shared Registry**
- **“True Team”**: self aware as team, defined roles, responsibilities, and communication processes
### Table 3. Care Measure Results

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre-TCC (N=17)</th>
<th>Post-TCC (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N eligible</td>
<td>N met (%)</td>
</tr>
<tr>
<td><strong>HIV Quality Measures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Retention in care</td>
<td>17</td>
<td>13 (76)</td>
</tr>
<tr>
<td>2. CD4 Measurement</td>
<td>17</td>
<td>14 (82)</td>
</tr>
<tr>
<td>3. HIV viremia control</td>
<td>15</td>
<td>15 (100)</td>
</tr>
<tr>
<td>4. Syphilis screening</td>
<td>17</td>
<td>6 (35)</td>
</tr>
<tr>
<td>5. HCV screening</td>
<td>17</td>
<td>17 (100)</td>
</tr>
<tr>
<td>6. HBV screening</td>
<td>17</td>
<td>13 (76)</td>
</tr>
<tr>
<td>7. Influenza vaccination</td>
<td>17</td>
<td>8 (47)</td>
</tr>
<tr>
<td>8. Pneumococcal vaccination</td>
<td>17</td>
<td>15 (88)</td>
</tr>
<tr>
<td>9. HBV vaccination</td>
<td>5</td>
<td>2 (40)</td>
</tr>
<tr>
<td><strong>Cardiovascular Risk Factor Measures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Hypertension control</td>
<td>10</td>
<td>10 (100)</td>
</tr>
<tr>
<td>11. Glycemia control</td>
<td>4</td>
<td>3 (75)</td>
</tr>
<tr>
<td>12. Lipid monitoring</td>
<td>17</td>
<td>16 (94)</td>
</tr>
<tr>
<td>13. Tobacco cessation</td>
<td>17</td>
<td>5 (29)</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Alcohol screening</td>
<td>17</td>
<td>3 (18)</td>
</tr>
<tr>
<td>15. Depression screening</td>
<td>17</td>
<td>0 (0)</td>
</tr>
<tr>
<td>16. Very/completely satisfied with care</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>17. Travel time, minutes, median (IQR)</td>
<td>17</td>
<td>320 (180–594)</td>
</tr>
</tbody>
</table>

*TCC Telehealth Collaborative Care*
Qualitative Evaluation

- Stigma and privacy: not barriers to TCC implementation
- Access improved through convenience
  - Trade-off with care coordination at 2 sites
  - Still relied on telephone for questions
- High value placed on specialist care
  - Little interest in turning all care over to PCP (SCAN-ECHO model)
COM View of the Tele-HIV

- Could not have happened without champion (Mike Ohl) and building relationships
- Can it spread? See one, do one, teach one
- Established local expertise with equipment, scheduling, and broadband to CBOCs
- Zero sum game for actual clinic access
  - improved perceived access for patient
The effect of Tele-ICU on ICU inter-hospital transfers in Veterans Affairs Health Care System
Spyridon Fortis, Brice Beck, Mary Vaughan Sarrazin, Heather Schacht Reisinger
# Staff Acceptance of Tele-ICU

## Pre-Implementation
- Understanding
- Perceived need
- Training
- Org Factors

## Post-Implementation
- Understanding
- Impact on work
- Usefulness
- Relationships
- Disruptions
- Unmet expectations
Clinical Outcomes of Tele-ICU

- Overall mixed results
- Still working on who benefits the most and in what setting
- Is there evidence it can impact transfers to a higher level ICU?
### Unadjusted Transfer and Mortality rates

<table>
<thead>
<tr>
<th></th>
<th>Tele-ICU Group</th>
<th>Control Group</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td></td>
</tr>
<tr>
<td>Transfers</td>
<td>(n=36,551)</td>
<td>(n=12,004)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Mortality</td>
<td>(n=115,183)</td>
<td>(n=117,441)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1569(4.3%)</td>
<td>393(3.3%)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>2924(2.5%)</td>
<td>2946(2.5%)</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>3095(8.5%)</td>
<td>1004(8.4%)</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td>11822(10.3%)</td>
<td>11494(9.8%)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

**Medical**

**Surgical**
COM View of the Tele-ICU

- In the right setting, has great potential
  - Rural and/or small ICUs
  - Lacking Critical Care MDs
  - Medical > Surgical
- Risk of driverless/driver assist cars
  - Can you take your hand off the wheel, or do you need to still pay attention?
- Local Champions to accept, model, and promote use
Original Research
Feasibility and Effectiveness of Remote, Telephone-Based Delivery of Cardiac Rehabilitation

Bonnie Wakefield, RN, PhD, Kariann Drwal, MS, Melody Scherubel, PhD, Thomas Klobucar, PhD, Skyler Johnson, MS, and Peter Kaboli, MD, MS

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Why Cardiac Rehab for Tele-Health?

- Access to Cardiac Rehab at Iowa City VA
  - No on-site program (fee-basis/Project HERO)
  - Safety/efficacy questions of home-based
  - ORH 2011 Pilot Project
    - Higher Home-based completion (84% vs. 73%)
    - Cost comparable to center-based
    - High patient satisfaction
## Patient Satisfaction

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The education information given to me during the rehab program was helpful.</td>
<td>4.7 (.5)</td>
</tr>
<tr>
<td>Completing the rehab program at home was convenient.</td>
<td>4.8 (.5)</td>
</tr>
<tr>
<td>The person who guided my cardiac rehab was helpful.</td>
<td>4.8 (.5)</td>
</tr>
<tr>
<td>The person who guided my cardiac rehab had a good understanding of my medical condition.</td>
<td>4.7 (.6)</td>
</tr>
<tr>
<td>I would recommend this program to other Veterans who would need it.</td>
<td>4.8 (.4)</td>
</tr>
</tbody>
</table>

On a rating where 1= strong disagree, 2=disagree, 3=neutral, 4=agree, 5=strong agree
## Pilot Cost Analysis

<table>
<thead>
<tr>
<th>Cost Comparison Between Remote Delivery and Usual Care</th>
<th>Using estimated costs for remote program as administered (patient n=48)</th>
<th>Actual estimated costs for a constant panel of 100 patients per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract cost per patient</td>
<td>$1,157</td>
<td>$1,157</td>
</tr>
<tr>
<td>Remote delivery cost per patient</td>
<td>$1,245</td>
<td>$807</td>
</tr>
<tr>
<td>Absolute difference</td>
<td>$88</td>
<td>$350</td>
</tr>
</tbody>
</table>
What is the Home-based Model?

- 12 Weeks:
  - Individualized weekly phone calls by a cardiac rehabilitation professional
  - Exercise prescription, nutrition counseling, medication adherence, stress management, smoking cessation

- Inclusions:
  - Stable Heart Failure
  - Stable Angina
  - Coronary artery disease
  - Post PCI, MI, CABG
  - Post valve replacement/repair
Home-based model

The Program
• Enrollment appointment in person or by video
• Equipment & Education Provided (peddler, pedometer, resistance bands, patient workbook).
• Weekly calls with individualized tailored education and exercise prescription
• Additional referrals as needed

Program Staff
• Medical Director
• Program Director
• Other Staff
  • Additional cardiac rehab providers
  • Assistants
Home-based CR Sites
Program Growth: ORH Promising Practice

HBCR Enrollment (as of June 2016)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Sites</th>
<th># of Enrolled Veterans</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY12</td>
<td>1 site</td>
<td>10</td>
</tr>
<tr>
<td>FY13</td>
<td>1 site</td>
<td>20</td>
</tr>
<tr>
<td>FY14</td>
<td>4 sites</td>
<td>200</td>
</tr>
<tr>
<td>FY15</td>
<td>11 sites</td>
<td>250</td>
</tr>
<tr>
<td>FY16</td>
<td>18 sites*</td>
<td>350</td>
</tr>
</tbody>
</table>
COM View of Tele-Cardiac Rehab

- **Access:**
  - Telephone is simplest form of telehealth
  - Overcomes transportation/time barriers
  - Previously rarely offered (fee-basis)
  - Patient choice

- Cost-neutral or savings with little space needs
- Expandable to a hub-and-spoke model
Practical Barriers to TH Adoption

Acceptance:

- Providers: serve as the champion/catalyst
- Administration: TH as routine care, not something special, and don’t force it
- Payors: currently 26 states require similar payments for insurance for TH visits
- Patients: try it once
Future Directions in Research

- Refining metrics for both Access and Quality
- The virtual waiting room
- Is there a tele-health "tipping point" in which we have gone too far?
  - Potentials for harm?
  - Substitute for F2F vs. complement
    - Group visits, asynchronous secure messaging, peer-support, caregiver-support
- Audience ideas?
Thank you