Telemedicine & Stroke Rehabilitation

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No disclosures
Goals & Objectives

- At the conclusion of this activity, participants will have a better understanding of the application of video conferencing to stroke care – specifically preventing hospital transfers from rehab units and improving the quality and compliance with home PT.
Have you used telemedicine before?

1. Yes
2. No
If you have used telemedicine before, was it for (check all that apply):

1. Stroke patient assessment in the ED
2. Tele-Consultation with patient in another facility
3. Tele-Consultation with a patient at home
4. Other
What is telemedicine?

• The use of medical information exchanged from one site to another via electronic communications to improve a patient’s clinical health status.
Telemedicine is not ......
Telemedicine is not ........
Telemedicine is not ......
Telemedicine is not ......
Telemedicine is ......
Hardware
Stroke Care Transitions
Stroke Care Transitions
Stroke Care Transitions
Stroke Tele-Medicine & Care Transitions

• In-patient rehab units
  – Tele-Consult
  – Bringing the physician to rehab (remotely).
    • Deal with evolving medical problems, and prevent readmissions.

• Home rehab
  – Tele-Rehab
  – Bringing technology to the patient’s home.
    • Improve compliance with home therapy.
Medical Complications and Transfers During Stroke Rehabilitation

- 1027 in-pt stroke rehab patients.
  - 75% had ≥1 medical complication during rehabilitation.
  - 19% had a medical complication that required transfer to an acute care facility.
## Complications & Transfers

<table>
<thead>
<tr>
<th>Complication</th>
<th>Number</th>
<th>%</th>
<th>Number</th>
<th>%</th>
<th>% All transfers</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVT</td>
<td>44</td>
<td>4.1%</td>
<td>35</td>
<td>83.3%</td>
<td>13%</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>42</td>
<td>4%</td>
<td>20</td>
<td>47.6%</td>
<td>8%</td>
</tr>
<tr>
<td>Angina</td>
<td>29</td>
<td>2.9%</td>
<td>20</td>
<td>70%</td>
<td>8%</td>
</tr>
<tr>
<td>New stroke</td>
<td>16</td>
<td>1.6%</td>
<td>14</td>
<td>87.5</td>
<td>5%</td>
</tr>
<tr>
<td>Seizure</td>
<td>15</td>
<td>1.5%</td>
<td>12</td>
<td>80%</td>
<td>5%</td>
</tr>
<tr>
<td>UTI</td>
<td>313</td>
<td>30.5</td>
<td>10</td>
<td>3.2%</td>
<td>4%</td>
</tr>
<tr>
<td>CHF</td>
<td>20</td>
<td>2%</td>
<td>6</td>
<td>30%</td>
<td>2%</td>
</tr>
</tbody>
</table>
ER Transfers and Re-admissions

• 40% released, cost $1239.

• 60% readmitted, cost $2000-5000.

• Not to mention hospital penalties for certain readmissions.
Remote Tele-Consultation, 24-7
Internist or Specialist
Compliance with Rx

- Rx Prescribed: 100%
- Rx Filled: 88% (-12%)
- Rx Taken: 76% (-12%)
- Rx Continued: 47% (-29%)
Why don’t patients do their home PT?
Campbell et al J Epidemiol Community Health 2001;55:132-138

20 knee arthritis patients, given 9x30m PT sessions with a home exercise program:

- During therapy:
  - All (8 fully and 20 partially) compliant with home program.
  - “Didn’t want to disappoint therapist”.

- After therapy:
  - 7 compliant at 3mo and 5 at 6mo.
  - Lack of motivation, Lack of perceived efficacy, Lack of knowledge, Time management.
Home Tele-rehabilitation

- Interventions, Motivation, Support & Encouragement, Monitoring and Education.
Home Teleconf Group Rehab
ALS Clinic Visit at Home

This is a pilot research project, currently only open to selected established patients. We will be providing virtual multidisciplinary home visits to selected ALS patients and then have them compare the experience to more conventional hospital based encounters.

About Neil
I am a board certified neuromuscular neurologist, licensed to practice medicine in New Jersey (MA073157).
I direct a MDA and ALSA affiliated clinic at Monmouth Medical

Neil Holland
Free
No times available
A Role for YouTube in Telerehabilitation

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Abstract

YouTube (http://youtube.com) is a free video sharing website that allows users to post and view videos. Although there are definite limitations in the applicability of this website to telerehabilitation, the YouTube technology offers potential uses that should not be overlooked. For example, some types of therapy, such as errorless learning therapy for certain language and cognitive deficits can be provided remotely via YouTube. In addition, the website's social networking capabilities, via the asynchronous posting of comments and videos in response to posted videos, enables individuals to gain valuable emotional support by communicating with others with similar health and rehabilitation challenges. This article addresses the benefits and limitations of YouTube in the context of telerehabilitation and reports patient feedback on errorless learning therapy for aphasia delivered via videos posted on YouTube.

Key words: telerehabilitation, speech-language therapy, YouTube, aphasia
Virtual Reality Tele-rehab
Tele-Rehabilitation

- Home based VR assisted motor therapy can be as (or even more) effective than conventional therapy after stroke.
- Adding remote monitoring and video-conferencing with therapist improves motivation and compliance.

- Citajilo et al Disabil Rehabil 2013; 34:13-18
- Piron et al j Rehabil Med 2009; 41: 1016-1102
- Lutz et al Top Stroke Rehabil 2007; 14:32-42