Development of an ‘In-Home’ Telehealth Substance Abuse Management Program for Veterans with Substance Use Disorders

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Scientific Retreat on Telemedicine
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The ‘In-Home’ Messaging Device (IHMD)

The Health Buddy® appliance
Bosch-Health Hero

The Viterion V100 appliance
Panasonic

Commonly used in internal Medicine for patients with:
- Hypertension
- Diabetes
- Congestive heart failure
- Lung disease
- Spinal cord injury
- Traumatic brain injury

Psychiatry:
- Post-Traumatic Stress Disorder
- Depression
- Schizophrenia
IHMD Features

- Connected via landline phone to a secure server which provides assessment and disease ‘self-management’ education to patients in their homes (Darkins et al., 2008).

- IHMDs contain text-based messages delivered through a messaging window or screen.

- Patients push buttons on the device to proceed through the disease management protocol.

- Patient responses to protocol questions are electronically recorded and made available to Care Coordinators (e.g., nurses, social workers, dieticians, nurse practitioners) on their computer desktop.
Care Coordination Home Telehealth (CCHT) manages the Veterans Administration national home telehealth program.

Goal is to provide home telehealth treatment and disease management technologies to patients with chronic conditions (Darkins et al., 2008).

Prevents unnecessary hospital admissions or long-term institutional care.

Assists patients to live independently at home.
IHMD Features

The Alert System:

- Patient responses are risk stratified or color coded (e.g., red, yellow, green) to triage particular “out of parameter” behaviors (e.g., binge drinking, illicit drug use, withdrawal symptoms) requiring immediate attention or intervention.

- The Care Coordinator may contact the patient directly or refer the patient to his/her primary care provider to help build the patient’s self-management skills, provide case management, or evaluate for more intensive services or intervention.

- Questions and treatment information designed with expanding branching logic for individualized assessment and intervention (will provide example).

- Daily dialogues are < 10 minutes in length.
IHMD Advantages

- Simple, user-friendly, readily visible
- Provides care coordinator with a daily stream of data regarding the patient’s health problem
- Gets patients to self-monitor and consider issues related to self-managing their health problem each day
- Motivates and educates patients on how to improve their health problem
- May be used alone for patients not engaged in formal treatment programs or as an add-on to program services
- Delivers evidence-based treatment components to patients at home
- May provide opportunities for targeted outreach (during periods of lapses and relapses)
- Supports patient care in least restrictive setting
Efficacy-IHMD’s

- IHMDs reduced total number of inpatient hospital stays among veterans with chronic heart failure (Schofield et al., 2005).

- IHMDs improved recovery outcomes (symptom evaluation and postoperative problems) among elderly coronary artery bypass patients (Zimmerman et al., 2004).

- 50% reduction in the proportion of diabetic patients who were hospitalized and an 11% reduction in emergency room use (Chumbler et al. 2005).

- High satisfaction (94%) among 791 chronic medical and 120 mental health patients who have used IHMDs (Ryan et al. 2003).

- Systematic development and randomized controlled evaluation of IHMDs for use with patients with substance use disorders has not occurred previously.
Background

- Of the estimated 25 million U.S. veterans, approximately 11% are dependent on or abusing alcohol and illicit drugs.

- Only 0.8% of patients receive specialty treatment for these substance use disorders (Office of Applied Studies, 2005).

- **Roadblocks:**
  - Lack of transportation
  - The elderly
  - Physical challenges
  - Many returning OEF/OIF veterans unable to attend outpatient services.
  - Rural living (too far away from nearest VA hospital)
  - Stigma (especially for those who remain in active duty)

- 2007: VA Office of Telehealth requests IHMD program development for veterans with substance use disorders to enhance their access to supportive treatment services.
Substance Use Disorder Program (SUD)

I. **Daily assessment** (repeated daily)
   - Alcohol use (craving and commitment)
   - Drug use (craving and commitment)
   - Acute risk (withdrawal sx, suicidality)

II. **Self-Management Skills** (unique)
   - Building Motivation Modules (8)
   - Coping and Skills Training Modules (10)
   - Social and community Support Group Skills Building Modules (9)
I. Daily assessment

Based on practitioner guidelines from the National Institute on Alcohol Abuse and Alcoholism (NIAAA; U.S. Department of Health and Human Services, 1995)


II. Self-Management Skills

Based on substance abuse behavioral intervention from the Combined Behavioral Intervention Manual (CBI; Miller, Moyers, & Arciniega, 2005) utilized in the Combining Medications and Behavioral Interventions study (COMBINE; Anton et al., 2006).

CBI manual:

Empirically supported psychotherapy intervention. Adapted from three treatments:

- Motivational enhancement therapy
- Cognitive behavioral skills training
- Twelve-step facilitation and recovery support
**SUD Alcohol Use Assessment**

**How many alcohol drinks did you drink in the past 24 hours?**
1 alcohol drink = 12 ounces of beer, 3.5 ounces of wine or 1.5 ounces of 80 proof spirits

- **0**
  - Great! You’re meeting your goal of not drinking.
- **≥1**
  - Stay home and avoid situations in which you or others could get hurt. Please don’t drive at this time. If you are having a medical emergency, please call 911 immediately.

**Are you currently intoxicated from drinking?**

- **Yes**
  - If ≥4 (High alert)
    - Your goal is to not drink. You drank very heavily. Use your <in home program> to help you not drink again. Follow up with your Care Coordinator.
  - If 2-3 (Moderate alert)
    - Your goal is to not drink. You drank quite a bit. Use your <in home program> to help you not drink again. Follow up with your Care Coordinator.
  - If 1 (Low alert)
    - Your goal is to not drink. You had a slip. Use your <in home program> to help you not drink again.

**On the scale below, please rate your level of craving to drink alcohol today.**

- **0** craving at all
- **10** Extreme Craving

**On the scale below, please rate how committed you are to NOT drink today.**

- **0** Not at all committed
- **10** Extremely committed

The Care Coordinator, using clinical judgment, will contact veteran for combination of cravings >8 and commitment to remain alcohol free ≤3.

The “Alert” indicator is for the Care Coordinator staff member. High alert triggers a call from the Care Coordinator. Moderate alert will trigger a call back if the patient calls, or the care coordinator may call based on clinical judgment. Care Coordinator may or may not call for low alert based on clinical judgment.
I. Daily Assessment Dialogues:
- Alcohol Use Assessment
- Drug Use Assessment
- Risk Assessment

II. Building Motivation Modules:
- Importance Ruler
- Values sort
- Pros and Cons: Benefits of stopping use
- Pros and Cons: Costs of continuing to use
- Personal strengths
- Past successes
- Confidence ruler
- Change planning
II. Coping and Skills Training Modules

- Recognizing triggers
- What I do to no drink or use drugs
- Coping with craving and urges to use (Day 1)
- Coping with craving and urges to use (Day 2)
- Mood management
- Changing automatic negative thoughts
- Assertive communication in conflict situations (Day 2)
- Assertive communication: General skills (Day 1)
- Alcohol refusal skills for handling social pressure (Day 1)
- Alcohol refusal skills for handling social pressure (Day 2)
II. Social and community Support Group Skills Building Modules

- Enjoyable activities
- Self-help support groups
- Supportive person
- Social support
- Case management needs
- Treatment participation, Pros of Attending
- Treatment participation, Overcoing obstacles
- Medication Adherence
- Continuing recovery and Wrap up
- Relapse
Primary Aim: To preliminarily test SUD for use with IHMDs and to establish initial acceptability and feasibility when delivered by Care Coordinators to patients with substance use disorders.

Participants: Six volunteer participants were referred by their primary care clinician between November 2009 and March 2010 to Care Coordination Home Telehealth (CCHT) services.

Inclusion criteria:

- History of and/or current alcohol, drug, or poly-substance dependence.
- Currently being followed by a VA primary care clinician for substance dependence/abuse.
- Enrollment in a VA intensive outpatient substance abuse program for current alcohol and/or drug dependence.
## Demographic Variables/Participant Characteristics (n = 6)

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>57.3 ± 6.3</th>
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<tbody>
<tr>
<td>Race</td>
<td>4 Caucasian / 2 African American</td>
</tr>
<tr>
<td>Sex</td>
<td>6 (100%) Male</td>
</tr>
<tr>
<td>DSM-IV Alcohol Dependence</td>
<td>5 (83%)</td>
</tr>
<tr>
<td>DSM-IV Cocaine Dependence</td>
<td>1 (16%)</td>
</tr>
<tr>
<td>Time in recovery</td>
<td></td>
</tr>
<tr>
<td>6 mos to ≤ 1 yr</td>
<td>2 (33%)</td>
</tr>
<tr>
<td>2 yrs</td>
<td>1 (16%)</td>
</tr>
<tr>
<td>0 yrs</td>
<td>2 (33%)</td>
</tr>
<tr>
<td>3 yrs, recently relapsed</td>
<td>1 (16%)</td>
</tr>
</tbody>
</table>
Quantitative Assessment

Likert scale from ‘1 = not at all helpful/not at all easy’ to ‘10 = extremely helpful/extremely easy’:

1. How helpful was SUD in supporting your effort to not drink and/or use drugs?

2. How easy it was to understand the SUD material and to use the IHMD device?

3. How easy it was to set up your IHMD.

From ‘1 = not at all satisfied’ to ‘10 = extremely satisfied’:

4. How satisfied were you with SUD in addressing your substance use problem?

5. Average number of days and time participants logged onto their device during the 27 day program was recorded.
Qualitative Assessment

Likert-type response scale ‘ from ‘not at all, mildly, moderately, strongly, very strongly’ :

6. How strongly did SUD motivate you to address your substance use problem?

7. How much did SUD assist you to cope with and manage your substance use problem?

8. To what degree did the daily assessment help you to monitor your substance use?

9. To what degree would you recommend SUD to others?

Data analysis involved descriptive statistics using SPSS version 17.0
## SUD Qualitative Pilot Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Average of 1-to-10 (not at all helpful/not at all easy- to- extremely helpful/extremely easy) Likert-Scale Response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quantitative Results:</strong></td>
<td><strong>Mean (SD)/Range</strong></td>
</tr>
<tr>
<td>SUD level of helpfulness in supporting effort to not drink/use drugs</td>
<td>8.2 (.57)/6.0 to 10.0</td>
</tr>
<tr>
<td>Ease of understanding SUD material</td>
<td>9.4 (.12)/8.0 to 10.0</td>
</tr>
<tr>
<td>Ease of using IHMD device</td>
<td>9.2 (.29) /8.0 to 10.0</td>
</tr>
<tr>
<td>Ease of setting up IHMD</td>
<td>10.0</td>
</tr>
<tr>
<td>Satisfaction with SUD in addressing substance use problem</td>
<td>8.2 (.29)/6.0 to 10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Qualitative Results:</th>
<th>% Modestly (n)</th>
<th>%Strongly (n)</th>
<th>%Very Strongly (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUD enhanced level of motivation to address substance use problem</td>
<td>33% (2)</td>
<td>17% (1)</td>
<td>50% (3)</td>
</tr>
<tr>
<td>SUD enhanced level of assistance to cope with and manage substance use problem</td>
<td>50% (3)</td>
<td>---</td>
<td>50% (3)</td>
</tr>
<tr>
<td>SUD daily assessment level of helpfulness in monitoring substance use</td>
<td>33% (2)</td>
<td>17% (1)</td>
<td>50% (3)</td>
</tr>
<tr>
<td>Would recommend SUD to others</td>
<td>----</td>
<td>50% (3)</td>
<td>50% (3)</td>
</tr>
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</table>
Summary from the SUD Pilot Study

IHMDs for Substance Use Disorders:

1. Offers a practical, accessible, feasible, acceptable, and supportive intervention when layered onto existing substance abuse outpatient treatment for patients with substance use disorders.

2. Participants reported that SUD was easy to use and understand, enhanced motivation to address substance use problems, provided helpful self-management skills for maintaining recovery, and enhanced the ability to cope with, monitor, and manage substance use problems.

3. Participants reported high satisfaction with the support SUD provided for addressing substance use problems, and most participants recommended SUD to others with a substance use problem.

4. Compliance rate was high (92%).
Does the SUD-IHMD lead to a significantly greater reduction in alcohol/drug use and an increase in treatment engagement outcomes by 3-month follow-up compared to participants in treatment as usual (TAU)?

Hypothesis: Participants who receive the SUD-IHMD will consume less alcohol/illicit drugs and will be engaged in and attend more continuous aftercare treatment than participants in TAU by the 3-month follow-up.
Interactive Voice Response Technology via cell phones may be approved within the VA in the next 6 to 12 months (as yet, no prior vendors have created a secure cellular network for VA data transmission)

Wireless IHMDs: Viterion

Palliative care management protocols
Can this be reimbursed in other health agencies?

- Use of IHMDs may be a Medicare/Medicaid covered service in other health care agencies

- Medicare/Medicaid may cover the cost of:
  - CCHT staff support
  - Transmission charges
  - Equipment

- Centers for Medicare and Medicaid Services:
  https://www.cms.gov/Telemedicine/

http://www.cahabagba.com/part_b/education_and_outreach/general_billing_info/telehealth.htm

Nancy Cox (Bosch): Reimbursement issues (856) 723-2522
For more information on IHMD program design:

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Acknowledgements

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