

Viability and Impact of Telehealth-Based Depression Care in Home Care

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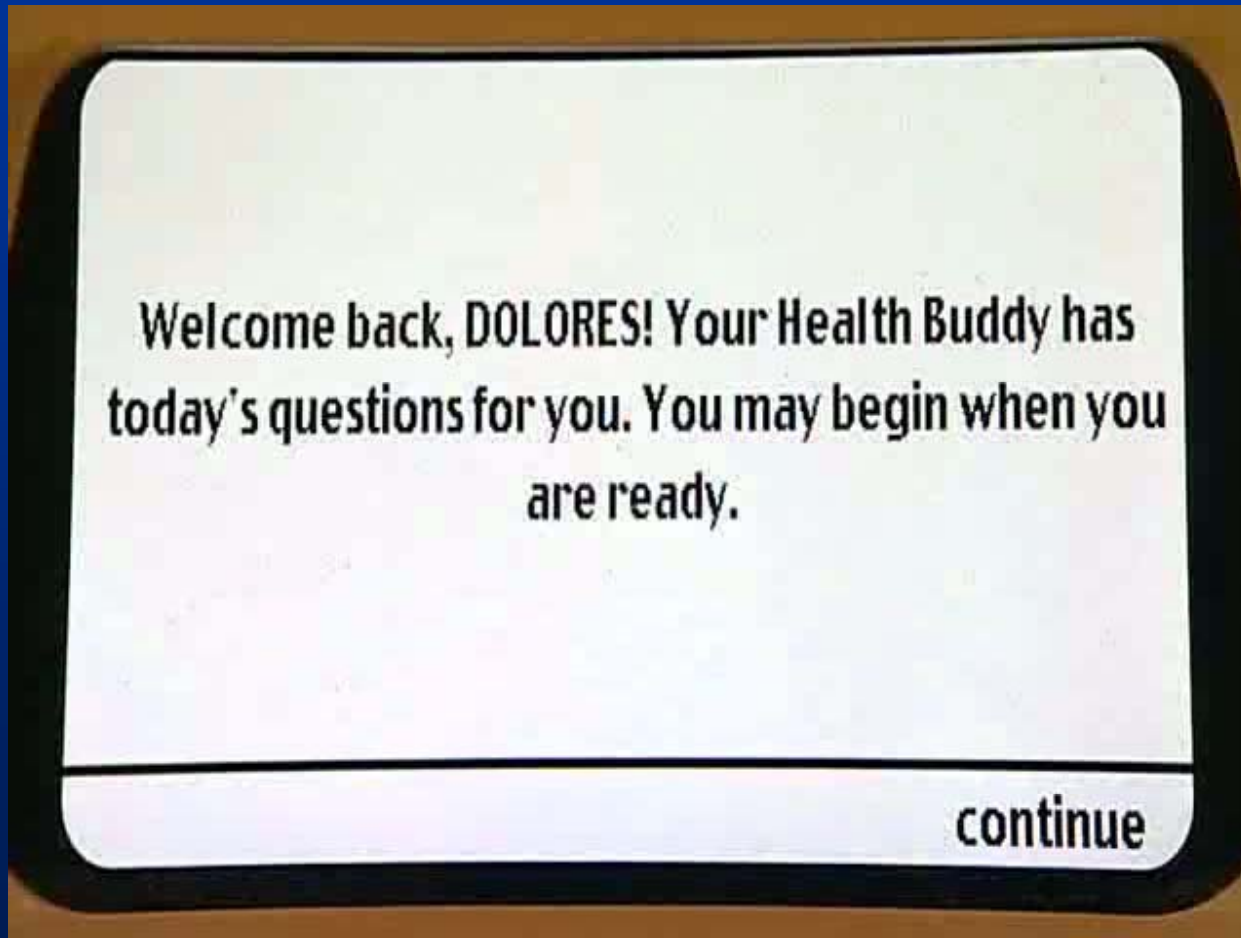
Telemonitoring in the Home Care Industry



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Telemonitor Demonstration



Telemonitoring in the Home Care Industry



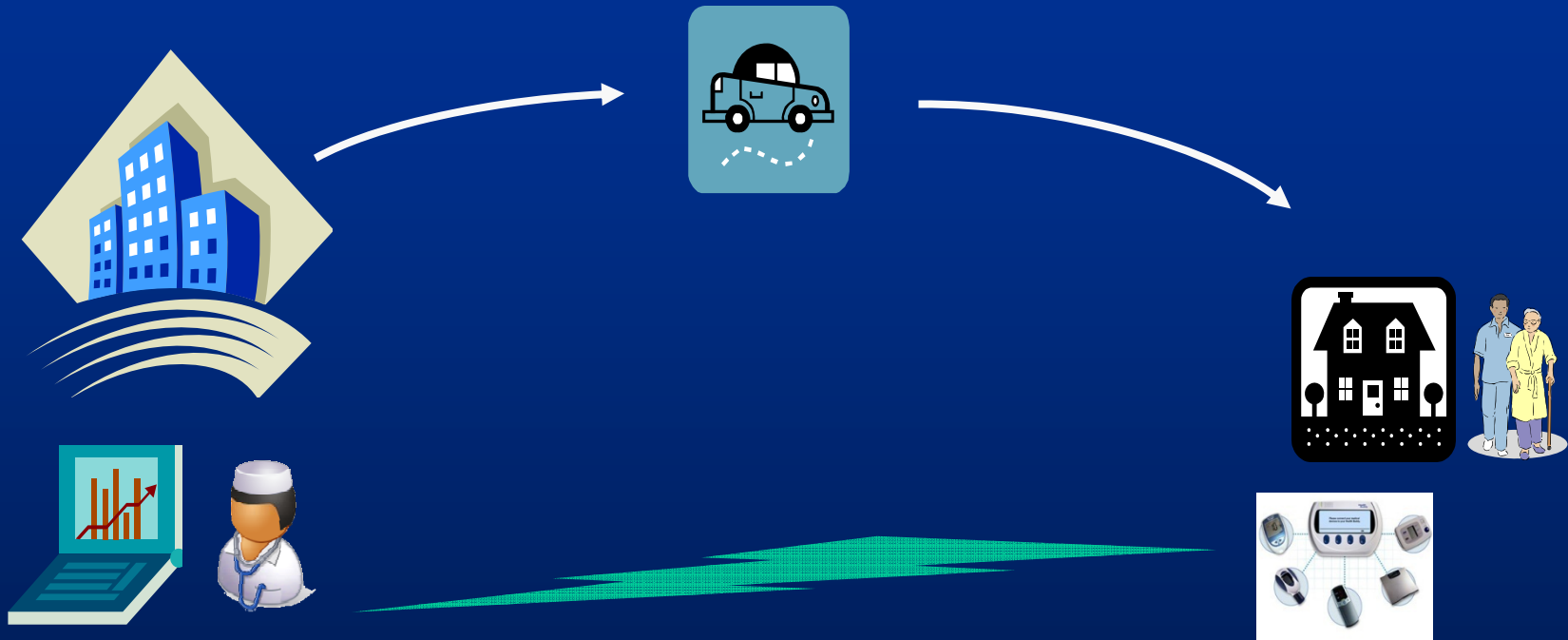
Telehealth in the Homecare Industry

- **Rationale** (NAHC/Philips, 2008)
 - Sub-acute, elderly population at home
 - Stabilizing across 1+ medical conditions
 - Healthy enough to be home but still vulnerable
- **Proposed value**
 - Better patient monitoring & care
 - Reduced utilization and costs
 - Reduced adverse events, emergent care, hospitalizations

Telehealth in the Homecare Industry

- Chronic disease management model
 - CHF
 - COPD
 - Diabetes
 - Etc.
- Use of the technology in the industry (among ~9,000 homecare agencies nationally)
 - Current use: 20% (NAHC/Philips, 2008)
 - Projected annual growth: 30%

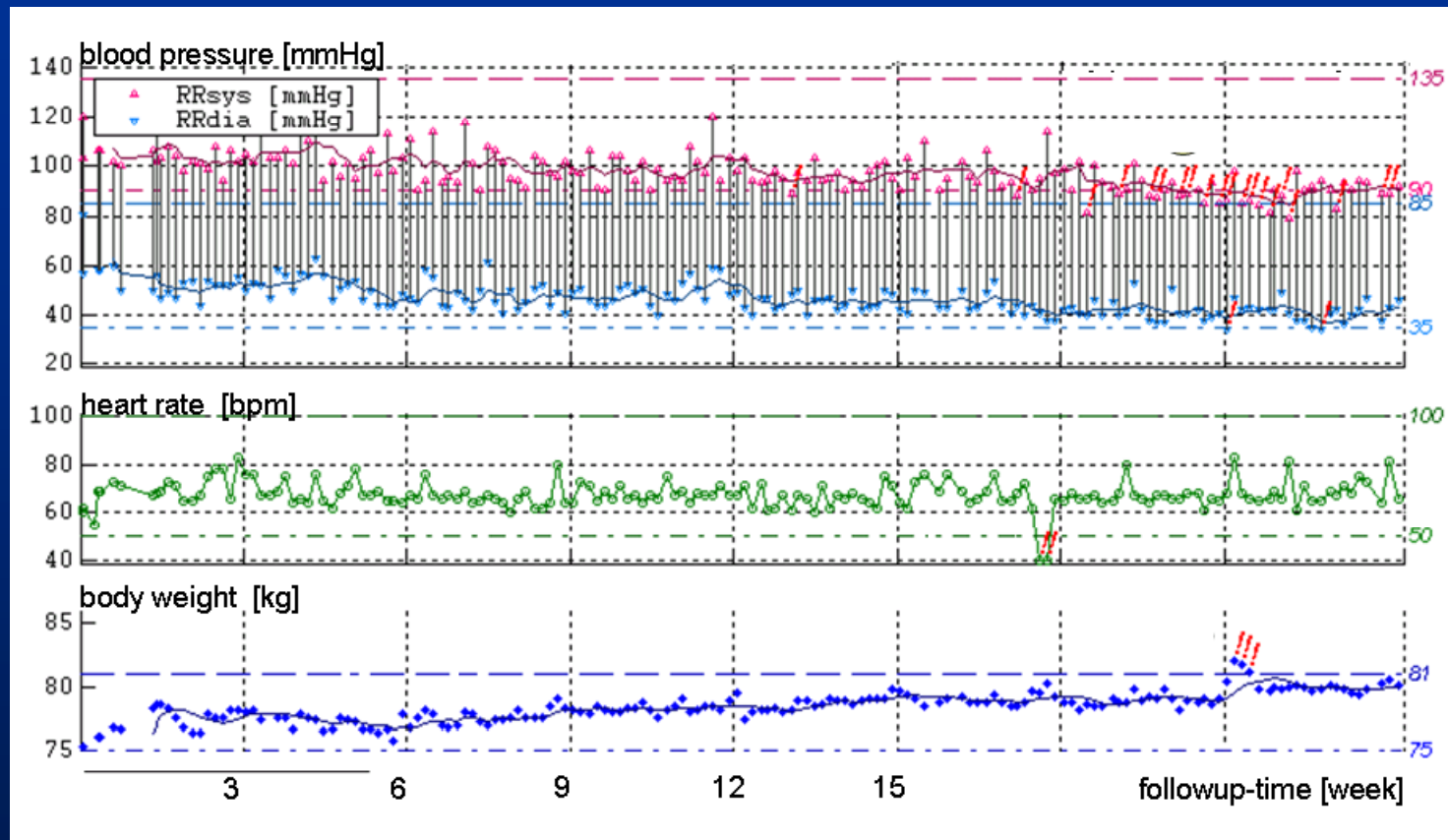
Service Delivery



Full Time Telehealth Nurse Care Manager



Charting



Can this technology be leveraged to improve depression care?

- Rates of geriatric depression in home care are high (MDD~14%, Bruce, et al, 2002).
- Geriatric depression linked to poorer disease outcomes, adverse events, increased utilization and costs, higher mortality (Shultz, et al, 2002; Byers, et al, 2008; Unutzer, et al, 2009; Bruce, et al, 1994; Glymour, et al., 2007; Sherwood, et al, 2007).
- The illness often goes undetected, untreated, or poorly treated (Bruce, et al, 2002).
- This is true despite dramatic increases in antidepressant use within the past decade (Bao, et al, in press).

Pilot Study Goals

- Long-term (care/outcomes/cost):
 - Can we improve care for more people who need it?
 - Can we improve outcomes for more people?
 - Can we do it at less cost?
- Short-term pilot goals:
 - Can we create a guideline-consistent protocol for a homecare telemonitoring program?
 - Do patients like it?
 - Do we get any indication of improved depression?

Collaborators

Agency Partners

- Suzanne Brown, BSN, RN
Visiting Nurse Services in Westchester, White Plains, NY
- Patricia F. Donehower, MSN, RN
Visiting Nurses Association of Chittenden and Grand Isle Counties, Burlington, VT
- Elizabeth Ellsworth, BA
United Homecare Services, Miami, FL

Academic Partners

- Martha L. Bruce, PhD, MPH
Weill Cornell Medical College, White Plains, NY
- Terry Rabinowitz, MD
University of Vermont School of Medicine, Burlington, VT

Delivery of DCM to Homebound Elders via Telemonitoring

Task	How
1. Symptom assessment and tracking.	-Screen administered via monitor. -Assessment via telephone.
2. Treatment monitoring (dose, adherence, side effects).	-Telemonitor items. -Interview via telephone.
3. Patient education and activation.	-Basic education via telemonitor. -Education/goal setting during calls.
4. Consultation with mental health specialist and/or PCP	- Phone and fax communication with PCP and/or MH professionals.

Collaborative Development

- Site visits
- Teleconferencing
- Staff meetings and focus groups
 - Protocol & telemonitor item development
 - Infrastructure set-up, programming
 - Telehealth nurse training and supervision
 - Research set-up and procedures
 - Ongoing implementation

Sample Telemonitor Items

- “Welcome to the [agency] telemonitoring system. This system will provide your telehealth nurse with important information about your health and your mood.”
- [Vitals, etc: Blood pressure, pulse, O2, temp, weight, blood sugar]
- “Now I will ask you some questions about your mood and how you are feeling. Please answer these questions as honestly as you can.”

Sample Telemonitor Items

- Have you had little interest in doing things lately?
 - 0 - No: That's good! We will ask you this question periodically to make sure you are still enjoying your interests or activities.
 - 1 - Yes: I'm sorry to hear that. In the past few weeks, how often has this bothered you?
 - 1- Several days.
 - 2- More than half the days.
 - 3- Nearly every day.

Sample Telemonitor Items

- Have you been feeling down, depressed or hopeless?
 - 0 - No: That's good! We will ask you this question periodically to make sure you are still feeling well.
 - 1 - Yes: I'm sorry to hear that. In the past few weeks, how often has this bothered you?
 - 1- Several days.
 - 2- More than half the days.
 - 3- Nearly every day.

Domains

- Depression status/severity (PHQ-2)
- Antidepressant adherence.
- Antidepressant side effects.
- Patient education:
 - Depression as an illness/stigma
 - Treatment: adherence, side effects, course of care/recovery

Support for the Intervention

- Training and booster sessions
- Supervision
- Mental health resources (agency & community)
- Suicide risk assessment and procedures
- Referral procedures
- Care coordination procedures (patient, telehealth nurse, visiting nurse, PCP, mental health professional)

Pilot Design

- Feasibility pilot
- English and Spanish versions
- Maximize participant use of the technology (pre-post design)
- Patient Eligibility
 - Age \geq 65
 - English or Spanish speaking
 - Depressive Symptoms/Using AD/Depression dx
 - Lifespan \geq 6 mo.
 - MMSE \geq 24
 - Not imminently suicidal
 - Able to have/use telemonitor in the home (land line, sensory non-impairing wrt telemonitor use)

Identification, Recruitment, Assessment

- Screening and initial identification
 - Telehealth nurse manager
 - OASIS items (CMS Outcome and Assessment Information Set)
- RA in-home recruitment & assessments
- Telemonitor set up in patients home
- Same-day call from telehealth nurse
- In-home monitoring & education provided
 - 3 days/week
 - Duration: 4-8 weeks

Research Assessments

- Baseline
 - Demographics
 - MMSE
 - SCID (mood module)/Suicide risk evaluation (if needed)
 - HAMD
- Follow-up
 - SCID
 - HAMD
 - Telehealth Satisfaction (adapted from Bratton & Short, 2001, and Quality Insights of Pennsylvania, 2005)
- Oversight & Supervision: Weekly conference calls

Telehealth Nurse Training and Protocol

- On-site training
- DCM components
 - Symptom assessment using the PHQ-9
 - Suicide risk assessment
 - Medication: dose, adherence, side effects
 - Patient education
 - Referral and professional communication
- Agency procedures
 - In-house referral
 - Supervision
- Documentation
 - Clinical/research documentation
- Supervision
 - Biweekly conference calls

Sample Document of Activities

Patient Contact Form: Depression Tele-Care

Instructions: Complete ALL sections with each patient phone contact.

Patient Name	Patient ID #	Telephone Contact Date	Nurse Name
		/ /	

Indicate reasons for calling patient (check all that apply):

Change in depression status (PHQ-9) Patient request
 Problems with antidepressant Other (indicate): _____
 Problems with behavioral activation _____



SECTION 1: PHQ-9

Are you administering the PHQ-9 for this call??

Yes (Complete Below) No (Skip to Section 2)

Over the last few weeks (or since we last talked about how you are feeling), how often have you been bothered by any of the following problems?

	Not at all	Several days	More than half the days	Nearly every day
1) Little interest or pleasure in doing things:	0	1	2	3
2) Feeling down, depressed, or hopeless:	0	1	2	3
3) Trouble falling or staying asleep, or sleeping too much:	0	1	2	3
4) Feeling tired or having little energy:	0	1	2	3
5) Poor appetite or overeating:	0	1	2	3
6) Feeling bad about yourself:	0	1	2	3
7) Trouble concentrating on things such as reading:	0	1	2	3
8) Moving or speaking so slowly that others could have noticed:	0	1	2	3
9) Thoughts that you would be better off dead:	0	1	2	3

Total PHQ-9 Score: _____

PHQ-9 Score 10 or greater? Yes No

Any Suicidal Thoughts? Yes No

SECTION 2: CURRENT TREATMENT STATUS (check all that apply)

- | | | | |
|---|------------------------------|-----------------------------|--|
| 1. Taking an Antidepressant | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Refused Treatment |
| 2. Receiving psychotherapy from MH professional | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Refused Treatment |
| 3. Other Type of Treatment _____ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Refused Treatment |

SECTION 3: ANTIDEPRESSANTS ADDRESSED DURING CALL?

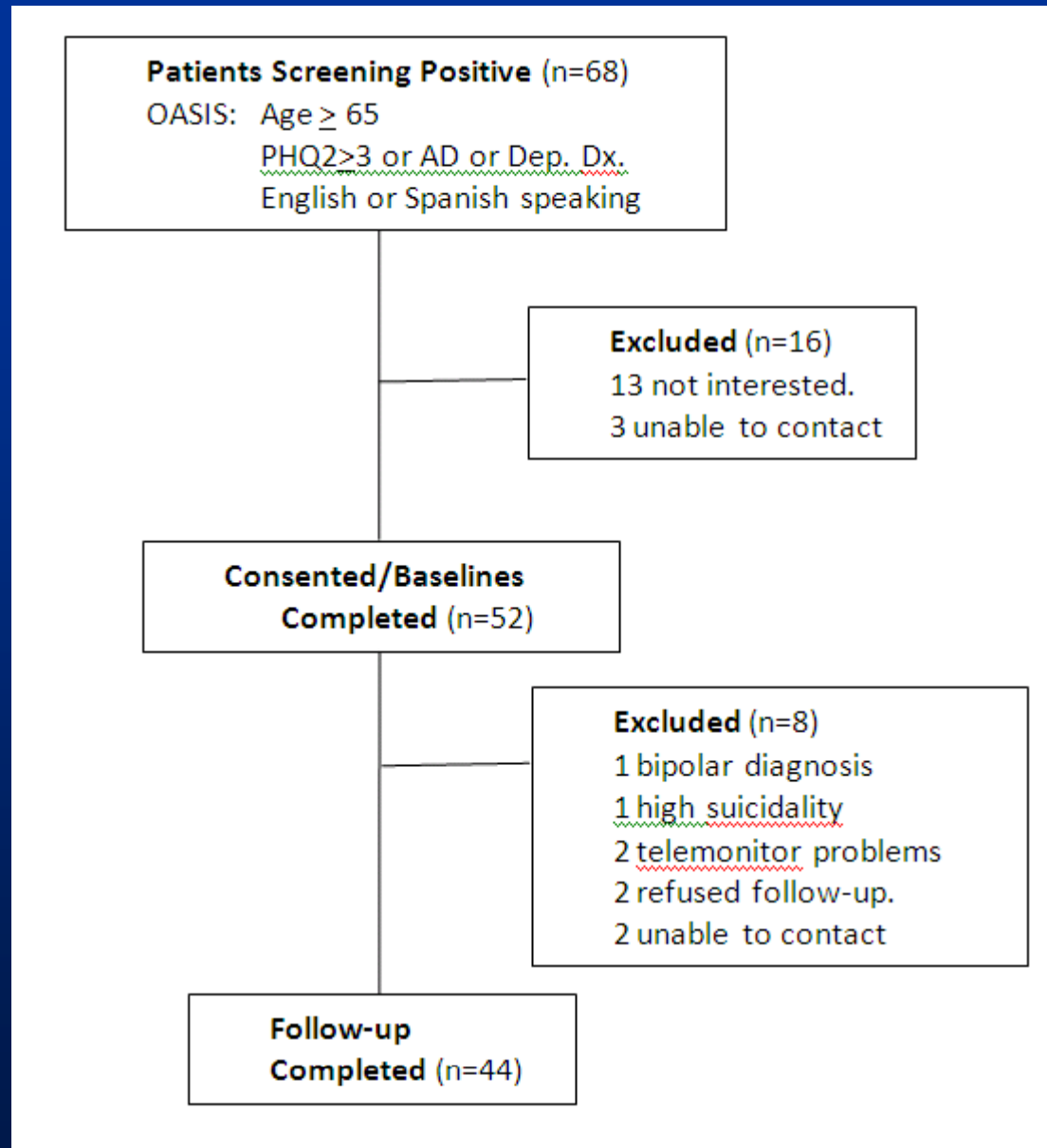
Yes (Complete Below) No (Skip to Section 4, see reverse)

AD Medication	Dose	Frequency
_____	_____	_____
_____	_____	_____

Compliance with AD medication? Yes No N/A

If Not Compliant Describe patient's actions: _____

Results



Patient Characteristics

Characteristic	N	%
Gender		
Female	30	62%
Male	18	41
Race/Ethnicity		
White	39	81%
African American	6	13
Native American	2	4
Hispanic	13	27
Other	1	2
Primary Language		
English	35	73%
Spanish	13	27
Marital Status		
Married	14	29%
Widowed	22	46
Separated/Divorced	10	21
Never Married	2	4

Patient Characteristics & Depression Status

Characteristic	n	%	Mn (SD)
Education			
Less than HS	19	40%	
HS Graduate/Some College	19	40	
College Graduate	10	21	
Living Circumstances			
Alone	23	48%	
With Spouse/Partner	16	33	
With Others	9	19	
Age (yrs): range=66-98			76.2 (7.7)
Cognitive Status (MMSE Score)			26.8 (2.6)
Depression Status			
Endorsed Depressed Mood and/or Anhedonia	29	60%	
DSM-IV Major Depression	19	40	
HAMD for Full Sample (n=48)			15 .0 (8.1)
HAMD for Depressed (SCID) Sample (n=19)			21.4 (5.1)

Satisfaction/Acceptance: Patients

- Satisfied or Very Satisfied: 83%
- Comfort with Equipment: 84%
- Few Technical Problems: 72%
- It Improved Depression Care: 58%
- Would be Willing to Use Again: 82%
- Felt Confidentiality Maintained: 94%

Changes in Depression Severity (HAM-D)

Among depressed participants who received follow-up assessments (n=16):

- Baseline Severity = 20.9 (\pm 5)
- Follow-up Severity = 14.3 (\pm 8; p=.003)

Most Common Patient Comments

Positive Feedback	Frequency (%)
Felt more connected to the agency.	41%
The frequent checks from the monitor were comforting/reassuring.	30%
Better understood my depression.	30%
Able to be more honest about my feelings.	27%
Negative Feedback	Frequency (%)
It was a burden. / It complicated my life.	12%
I didn't like using a machine to talk about my feelings.	8%

Limitations

- Broader-than-usual inclusion criteria (patients on antidepressants or having depression diagnosis)
- No control group
- Pre-post design
- Lack of blindness

Overall

- Demonstrated feasibility
 - Adapting protocol to the telemonitoring environment
 - Implementing it (across agencies, platforms, telehealth nurses, patients)
 - Research infrastructure
- Feedback on patient/nurse likes/dislikes
- Suggestions for improvement
 - Burden or lack thereof
 - Increasing interactivity (behavioral activation)
 - Integrating medical/side effect data in greater detail

Revisions and Next Steps

- Randomized comparative effectiveness trial
 - Compare to visiting nurse-based screening and referral
- Increased intervention intensity, interactivity, comprehensiveness.
- Cost Data
- Information relevant to personalized care?
 - Attitudes about technology
 - Attitudes/stigma about depression and mental health
 - Family and gatekeepers
 - PCP response

Intervention Changes

- PHQ-9
- Behavioral Activation
 - “Did you do any of the activities that you planned with your nurse?”
 - (if so) “How much did you enjoy the activity?”
 - 1- None 2 - A little 3 - A moderate amount 4 - A high amount
- Medical, Side Effects, Drug Interactions
 - Concurrent vitals, weight, etc
 - “Have you had any problems with upset stomach or nausea?”
 - Also included: Lower GI, anticholinergic, headache, excessive sweating

Some Real World Questions

- The patients love this stuff. How can we scale it up?
- Can we be reimbursed for this?
 - Under what conditions?
 - What about non-rural patients?
- Are there cost savings? Outcome benefits?
- Who pays for the equipment?
 - What's the cheapest platform that will still be effective?
- Is the platform HIPAA compliant?
- Licensing and professional portability.
- Which patients might not benefit?

Thank you