Reducing Hospitalizations Through Effective Depression Treatment

Martha L Bruce, PhD, MPH
Yolonda R. Pickett, MD, MS
   Department of Psychiatry
   Weill Cornell Medical College
Kathy Kunze, RN, BSN
   CareAnyware Division
   Brighttree, Inc.

Disclosures

• Grant funding from the National Institute Health
  – R01 MH056482
  – R24 MH064028
  – R01 MH082425
  – R01 MH096411
Outline

• Need for evidenced-based practices for depression
  – Prevalence of unmet need and risk factors for depression
  – Challenges and consequences of poorly managed depression
• Depression CAREPATH
  – Components of the protocol
  – Implementation Support
• Evidence Base

What is Depression?

• Everyday Blues to Clinical Diagnosis
• DSM-IV Major Depression
  – Five or more persistent symptoms, including
    1. Depressed Mood
       and/or
    2. Loss of interest or pleasure
  – Symptoms cause distress or impairment in function
Why Screen for Depression in Home Healthcare Patients?

- *Simple Answer:* OASIS M1730
- *As important,* depression adds to agency, clinician and patient burden

The Burden of Depression in Home Healthcare

- High prevalence
- Persistent and clinically meaningful
- Higher rates of suicide ideation
- Poorer adherence to treatment & therapies
- Sometimes difficult & cranky patients
- Higher use of services
- Increased risk of adverse falls
- Increased risk of hospitalization

Bruce et al., AJP 2002
Raue et al., Am J Geriat Psych, 2003
Sheeran et al., HH Nurse 2004
Raue, Int. J Geriat Psych, 2007
Byers et al., Res Geron Nurs 2008
Friedman et al., JAGS, 2009
Sheeran et al., Psych Services, 2010
Depression at Start of Care among Patients with Injurious Falls vs. Matched Controls

![Bar chart showing depression rates at start of care for matched controls and fallers.]

- Matched Controls: 25%
- Fallers: 44%

Sheeran et al., Home Healthcare Nurse 2004
Byers et al., Research in Gerontological Nursing. In press.

Discharge to Hospital by PHQ2 Scores

![Bar chart showing percent hospitalized by PHQ-2 total score.]

- 0-1 PHQ-2 Total Score: 12.7%
- 2+ PHQ-2 Total Score: 19.0%

Pickett et al., in press
Factors That Increase the Risk Of Depression in Older Adults

- Medical Illness
- Disability
- Cognitive Decline
- Social Isolation
- Loss And Other Negative Events

*Note: these factors are increasingly common with aging and characterize much of home healthcare*

Depression Diagnosis 2x More Prevalent in Older Homecare than Primary Care Patients

- 11.7% (Minor Dep)
- 24.3% (Major Dep)

Bruce et al., Am. J Psychiatry 2002
However,

Patients are referred to home healthcare with depression commonly...
• Not detected
  and/or
• Poorly treated and managed

Homecare Clinicians can do both

---

Increasing Importance of On-Going Management: Changes in Use of Antidepressant (HH Patients)

<table>
<thead>
<tr>
<th></th>
<th>2000*</th>
<th>2007**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chart Diagnosis of depression</td>
<td>3.0%</td>
<td>6.4%</td>
</tr>
<tr>
<td>Taking an Antidepressant</td>
<td>11.5%</td>
<td>39.5%</td>
</tr>
</tbody>
</table>
  • Depressed              | 23.0% | 69.1%  |
  • Not Depressed          | 14.6% | 27.1%  |

---

- Research data
- 2007 National Home and Hospice Care Survey
Just because a patient is taking an antidepressant doesn’t mean depressive symptoms are not important...

Persistent symptoms indicate that antidepressants are not working and need management

Detection: Challenges to Identifying Depression In Older Adults

• Belief that depression is:
  - “Normal” & Acceptable part of aging
  - A reflection of poor moral character & not treatable

• Symptoms overlap with medical illness
  - Misattribution of depression sx to medical illness
  - Misattribution of physical symptoms to depression

• Masked by:
  - Irritability or anxiety
  - disability, pain, cognitive impairment
Extra Challenges for HH Clinicians

• Time pressure
• New relationship
• Not the reason for referral
• Uncomfortable

How to Optimize Depression Screening?
Screening Goal

- Intervene with patients who need it
- Don’t intervene unnecessarily

Optimal Screening Should Be:

- **Sensitive**: Correctly identify as many depressed patients as possible
- **Specific**: Correctly identify patients are who not depressed
Screening Goal

All Patients

Depressed Patients

How to Screen for both Sensitivity and Specificity?
Step 1

When possible:

• Use the PHQ-2 (Item M1730)
• Use clinical skills in scoring
• Be generous (sensitive)

• Many clinicians “under” score the PHQ-2
• e.g., some check “1” when a symptom is present - regardless of frequency
• These clinicians miss high risk patients.
## M1730: PHQ2 Option

<table>
<thead>
<tr>
<th>PHQ-2</th>
<th>Not at all 0-1 day</th>
<th>Several Days 2-6 days</th>
<th>More than half of the days 7-11 days</th>
<th>Nearly every day 12-14 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Little interest or pleasure in doing things</td>
<td>Never</td>
<td>Sometimes</td>
<td>Often</td>
<td>Most of the time</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>b) Feeling down, depressed, or hopeless?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

### PHQ-2 Scoring Guidelines:

- **CMS Recommends:**
  
  PHQ-2 total score ≥ 3 ➔ Intervention

- **To Maximize Sensitivity AND Specificity, Cornell Recommends:**
  
  PHQ-2 total score ≥ 2 ➔ Further Assessment
Evidence: PHQ2 Scores vs. Research Assessments

<table>
<thead>
<tr>
<th>PHQ2 Total</th>
<th>Clinically Depressed*</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>62%</td>
</tr>
<tr>
<td>3</td>
<td>53%</td>
</tr>
<tr>
<td>&gt;3</td>
<td>72%</td>
</tr>
</tbody>
</table>

* Hamilton Depression Rating Scale (HAMD) > 10

Evidence: Discharge to Hospital by PHQ2 Scores

Pickett et al., in press
Step 2

• Be targeted (specific)
• Further Assessment
  • Nurse
  • Psychiatry
  • Social Work referral
• We recommend the PHQ-9

PHQ-9

• Brief (7 additional items)
• Measures depression severity
• Monitors severity over time
• Clinically meaningful cutoff scores
• Used and understood by many physicians.
• Easily integrated into clinical management software

Kroenke K et al., J Gen Intern Med. 2001 Sep;16(9):606-13.
Purpose of Using the PHQ-in in HH

• HH clinicians do not need to diagnose
• Identify patients needing further evaluation (referral)
  • Treatment needs of untreated patients
  • Treatment re-evaluation for treated patients

PHQ-9 Scoring Guidelines:

• PHQ-9 total score $\geq 10$ $\Rightarrow$ referral/intervention
• Note: Because many nurses “under” score, some HHAs may target lower PHQ-9 scores
Screening Protocol

The PHQ is most helpful when used in a clinically meaningful way.
E-training in the PHQ-9 Depressed Mood
E-training in the PHQ-9: Depressed Mood #2

PHQ-9: The “Difficult” Question

9. Thoughts that you would be better off dead, or of hurting yourself in some way
Q9 Follow-up: Suicide Risk Assessment Protocol

• If yes: Assess:
  • Nature & frequency of thoughts of inflicting self-harm
  • Past suicide attempts
  • Specificity of current plans & means to implement
  • Strength of death wishes
  • Intensity of hopelessness
  • Impulse control
  • Presence or absence of preventive deterrents

ASSESSING SUICIDE RISK AS A SPECTRUM*

No Suicide Ideation
- Normal focus on end of life issues due to advanced age, medical illness, or dwindling social networks.
- May have occasional thoughts about own mortality.
- Is not preoccupied with death; does not feel that would be better off dead.

Very Low Risk
- Has not considered a method to harm self

Mild Risk: Requires referral
- Morbid preoccupation with death; thoughts that life is not worth living or that would be better off dead (e.g., “I pray that God will take me soon”).
- Has not considered a method to harm self

Moderate Risk: Requires immediate referral
- Has considered a Method to harm self (e.g., “I’ve thought about taking all my pills, but I would never do it”).
  • Does not report a specific detailed plan or current intention to harm self.
  • Demonstrates reasons for living and good impulse control.

High Risk: Contact MH Clinician Do Not Leave Alone
- Reports a specific detailed Plan and/or Intent to harm self (e.g., “I’m planning to take all my pills tomorrow morning before my aid arrives”), or does not have good impulse control (e.g., “I may not be able to stop myself from doing this”).

Recurrent Thoughts of Death (Passive Suicide Ideation)
- Morbid preoccupation with death; thoughts that life is not worth living or that would be better off dead (e.g., “I pray that God will take me soon”).

Thoughts of Suicide (Active Suicide Ideation)
- Has considered a Method to harm self (e.g., “I’ve thought about taking all my pills, but I would never do it”).
  • Does not report a specific detailed plan or current intention to harm self.
  • Demonstrates reasons for living and good impulse control.

*Always follow individual agency/organization’s procedures for suicidal patients

E-training in Suicide Risk Assessment: Mild Risk

E-training in Suicide Risk Assessment: Moderate Risk
Before Screening For Suicide Risk, Agencies/Organizations Should:

• Have agency-specific protocols in place for use for patients identified as high suicide risk
• Such protocols should include, e.g.:
  • Steps for each level of risk
  • Strategies to ensure patient and assessor safety
  • Identification (with phone numbers) of whom assessor should contact
  • Telephone numbers for emergency services
  • Plans for formal clinical assessment

Interventions:
Depression Care Management
Depression Care Management/Collaborative Care Models in Older Primary Care Patients

- **Key Elements:**
  - Guideline-based treatments (antidepressants, psychotherapies)
  - New Role: Depression Care Manager

- **Evidence-Base**
  - PROSPECT (Bruce et al, 2004, JAMA)
  - IMPACT (Unützer et al, 2002, JAMA)
  - PRISM-E (Bartels et al, 2004, AJP)
  - RESPECT (Dietrich et al, 2004, BMJ)

---

**PROSPECT STUDY: Change in Depression Severity**

(n=609 older primary care patients)

![Graph showing change in depression severity over time for DCM and Control groups.](chart.png)
Impact of Depression on 9 Year Mortality Intervention vs. Usual Care

<table>
<thead>
<tr>
<th></th>
<th>Usual Care practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Depression</td>
<td>1.90 (1.57 to 2.31)</td>
</tr>
<tr>
<td>Minor Depression</td>
<td>1.32 (0.92 to 1.90)</td>
</tr>
<tr>
<td>Non-depressed</td>
<td>-</td>
</tr>
</tbody>
</table>

Adjusted Hazard Ratios; N=1238 (Age ≥ 65)
Adjusted for baseline age, gender, education, marital status, smoking, cardiovascular disease, stroke, diabetes, cancer, cognition, and suicidal ideation.

Gallo et al., Ann Intern Med. 2007;
Gallo et al., BMJ, 2013

Translating Depression Care Management Models to Fit Home Healthcare: Cornell’s Approach

- Partner with many HH agencies
- Build on clinical skills
- Minimize added burden
- Integrate into routine practice
- Implementation support
Depression CAREPATH
Depression Care for Patients in Homecare

1. **Every nurse provides basic Depression Care Management (DCM)**
   - Managing depression is comparable to other chronic diseases
   - Collaboration & signals for consultation or referral essential
   - Do not ask Nurses to give psychotherapy

2. **Intervention has two components**
   - Depression Care Management Protocol
   - Implementation Strategy

---

**Depression CAREPATH Protocol: Components**

<table>
<thead>
<tr>
<th>CAREPATH</th>
<th>DCM Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assessment</strong></td>
<td>Monitor symptoms severity and course of illness</td>
</tr>
<tr>
<td><strong>Case Coordination</strong></td>
<td>Communicate with the MD, consulting specialists</td>
</tr>
<tr>
<td><strong>Manage</strong></td>
<td>Monitor side effects and treatment adherence</td>
</tr>
<tr>
<td><strong>Educate and Instruction</strong></td>
<td>Education patients and families</td>
</tr>
<tr>
<td><strong>Assist</strong></td>
<td>Promote self-management, goal setting, pleasurable activities</td>
</tr>
</tbody>
</table>
Depression CAREPATH Management Protocol

1. **First DCM Visit**
   - **Assess**: Depression severity using the PHQ-9
   - **Coordinate**: care by preparing the Depression Care Presentation Template and contacting physician or specialist (per agency guidelines)

2. **Weekly**
   - **Monitor**: Depression severity using the PHQ-9
   - **Manage**: Antidepressants: dosage, adherence, side effects
   - **Instruct**: Patients and family about ongoing depression care
   - **Assist**: Patients in goal setting: self care and pleasurable activities

3. **Discharge**
   - **Coordinate**: next level of care by giving patient Depression Discharge Summary and review referral options with patient and family
   - **Recontact**
     - Physician or Mental Health Specialist when:
       - PHQ-9 score remains the same or worsens over 4 weeks
       - Suicide ideation (PHQ-9 item 9) emerges or worsens
       - Patient reports significant side effects
     - Otherwise clinically indicated

---

Depression CAREPATH Management Protocol

1. **First DCM Visit**
   - **Assess**: Depression severity using the PHQ-9
   - **Coordinate**: care by preparing the Depression Care Presentation Template and contacting physician or specialist (per agency guidelines)

2. **Weekly**
   - **Monitor**: Depression severity using the PHQ-9
   - **Manage**: Antidepressants: dosage, adherence, side effects
   - **Instruct**: Patients and family about ongoing depression care
   - **Assist**: Patients in goal setting: self care and pleasurable activities

3. **Discharge**
   - **Coordinate**: next level of care by giving patient Depression Discharge Summary and review referral options with patient and family
   - **Recontact**
     - Physician or Mental Health Specialist when:
       - PHQ-9 score remains the same or worsens over 4 weeks
       - Suicide ideation (PHQ-9 item 9) emerges or worsens
       - Patient reports significant side effects
     - Otherwise clinically indicated

---

Depression CAREPATH Management Protocol

1. **First DCM Visit**
   - **Assess**: Depression severity using the PHQ-9
   - **Coordinate**: care by preparing the Depression Care Presentation Template and contacting physician or specialist (per agency guidelines)

2. **Weekly**
   - **Monitor**: Depression severity using the PHQ-9
   - **Manage**: Antidepressants: dosage, adherence, side effects
   - **Instruct**: Patients and family about ongoing depression care
   - **Assist**: Patients in goal setting: self care and pleasurable activities

3. **Discharge**
   - **Coordinate**: next level of care by giving patient Depression Discharge Summary and review referral options with patient and family
   - **Recontact**
     - Physician or Mental Health Specialist when:
       - PHQ-9 score remains the same or worsens over 4 weeks
       - Suicide ideation (PHQ-9 item 9) emerges or worsens
       - Patient reports significant side effects
     - Otherwise clinically indicated

---

Bruce et al., HHN, 2011
Bruce et al., HHN, 2011
Depression CAREPATH Management Protocol

1. First DCM Visit
   - Assess: depression severity using the PHQ-9
   - Coordinate: care by preparing the Depression Case Presentation Template and contacting physician or specialist (per agency guidelines)
   - Manage: antidepressants: dosage, adherence, side effects
   - Instruct: patients and family with the Depression Education Toolkit
   - Assist: patients in goal setting: self care and pleasurable activities

2. Weekly (or at next visit)
   - Monitor: depression severity using the PHQ-9
   - Coordinate as needed
   - Manage: antidepressants: dosage, adherence, side effects
   - Instruct: patients and family about ongoing depression care
   - Assist: patient by reviewing goals for self care and pleasurable activities

3. Discharge
   - Coordinate: next level of care by giving patient Depression Discharge Summary and review referral options with patient and family
   - Recontact: Physician or Mental Health Specialist when:
     - PHQ-9 score remains the same or worsens over 4 weeks
     - Suicide ideation (PHQ-9 item 9) emerges or worsens
     - Patient reports significant side effects
     - Otherwise clinically indicated

©2010 Weill Cornell Homecare Research Partnership
Depression CAREPATH Management Protocol

**First DCM Visit**
- Assess depression severity using the PHQ-9
- Coordinate care by preparing the Depression Case Presentation Template and contacting physician or specialist (per agency guidelines)
- Manage antidepressants: dosage, adherence, side effects
- Instruct patients and family with the Depression Education Toolkit
- Assist patients in goal setting: self care and pleasurable activities

**Weekly (or at next visit)**
- Monitor depression severity using the PHQ-9
- Coordinate next level of care as needed
- Manage antidepressants: dosage, adherence, side effects
- Instruct patients and family about ongoing depression care
- Assist patient by reviewing goals for self care and pleasurable activities

**Discharge**
- Coordinate next level of care by giving patient Depression Discharge Summary and review referral options with patient and family

**Recontact**
- Physician or Mental Health Specialist when:
  - PHQ-9 score remains the same or worsens over 4 weeks
  - Suicide ideation (PHQ-9 item 9) emerges or worsens
  - Patient reports significant side effects
  - Otherwise clinically indicated

©2010 Weill Cornell Homecare Research Partnership

Bruce et al., HHN, 2011
Bruce et al., HHN, 2011
Depression CAREPATH Management Protocol

**First DCM Visit**

- **Assess**
  - Depression severity using the PHQ-9

- **Coordinate**
  - Care by preparing the Depression Care Presentation Template and contacting physician or specialist (per agency guidelines)

- **Manage**
  - Antidepressants: dosage, adherence, side effects

- **Instruct**
  - Patients and family with the Depression Education Toolkit

- **Assist**
  - Patients in goal setting: self care and pleasurable activities

**Weekly (or at next visit)**

- **Monitor**
  - Depression severity using the PHQ-9

- **Coordinate**
  - As needed

- **Manage**
  - Antidepressants: dosage, adherence, side effects

- **Instruct**
  - Patients and family about ongoing depression care

- **Assist**
  - Patient by reviewing goals for self care and pleasurable activities

**Discharge**

- **Coordinate**
  - Next level of care by giving patient Depression Discharge Summary and review referral options with patient and family

- **Recontact**
  - Physician or Mental Health Specialist when:
    - PHQ-9 score remains the same or worsens over 4 weeks
    - Suicide ideation (PHQ-9 item 9) emerges or worsens
    - Patient reports significant side effects
    - Otherwise clinically indicated

---

**Goal Setting (Not Psychotherapy)**

- Help Patients Manage Their Depression
  - Remain active mentally
  - Get regular exercise
  - Eat a healthy diet
  - Maintain personal hygiene
Supporting the Use of Depression CAREPATH

1. **Component One:** Depression Care Management Protocol
   - Online PHQ-9 E-Training (CEUs)
   - Online Depression CAREPATH E-Training (CEUs)

2. **Component Two:** Implementation Strategy
   - Agency Suicide Risk Protocol (online resources)
   - Agency Protocol for Depression Referral/Coordination
   - Agency list of Mental Health Resources
   - Integration of Protocol into clinical software
   - Patient-specific reports

[Image of website: MentalHealthTrainingNetwork.org]
Integration of Cornell CAREPATH Depression Content

Key Points

Integration of CAREPATH protocol
- Available for both Home Health and Hospice
- Home Health – accessible within OASIS visit notes and non-OASIS follow up visit notes

Location within notes
- SOC/ROC OASIS
  - Accessed after M1730 that currently contains the PHQ-2
- Non-OASIS home health and hospice notes
  - Included as part of the clinician’s Review of Systems
Key Points

Ability to document against interventions from within the care plan

- Clinicians can create patient specific care plans based on CAREPATH protocol
- Care plan interventions mapped directly to CAREPATH content
- Provides ability to closely monitor patient’s progress and make necessary changes to achieve positive outcomes and prevent re-hospitalization

Features and Benefits

- Content is designed to ensure that clinicians are asking the right questions and assessing patient’s clinical status appropriately

- Care Touch Logic prevents inconsistency in responses and guides clinicians through questions based on their documentation

- PHQ-9
  - Automatically totals for clinician - severity scales to quickly identify patients at risk
Features and Benefits

➤ Provides clinician the ability to document the following:
  • Current treatment and compliance
  • Changes in antidepressants
  • Side effects
  • Patient education
  • Communication and coordination

➤ Ability to view documentation history
  • When last documented and what was documented/taught

---

Reporting

➤ Comprehensive report that captures critical data points based on clinician documentation

➤ Report is customizable so that agency can view key data elements such as:
  • Individual patient PHQ-9 scores
  • Patients at risk
  • Responses to other questions to assist with providing appropriate care for the patient
### Sample Report

#### Depression Supervision Sample Report Data

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Date 1</th>
<th>Date 2</th>
<th>Visit Type</th>
<th>Visit Location</th>
<th>PHQ-9 Score</th>
<th>Patients at Risk</th>
<th>Response to Questions</th>
<th>Providing Appropriate Care for Patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jane Smith</td>
<td>1/1/2013</td>
<td>1/15/2013</td>
<td>Phone Call</td>
<td>Home</td>
<td>4</td>
<td>Yes</td>
<td>Yes</td>
<td>No Change</td>
</tr>
<tr>
<td>Tom Brown</td>
<td>1/8/2013</td>
<td>1/22/2013</td>
<td>In-Person</td>
<td>Clinic</td>
<td>6</td>
<td>No</td>
<td>No</td>
<td>Yes Change</td>
</tr>
<tr>
<td>Mary Johnson</td>
<td>1/12/2013</td>
<td>1/26/2013</td>
<td>Phone Call</td>
<td>Home</td>
<td>5</td>
<td>Yes</td>
<td>Yes</td>
<td>No Change</td>
</tr>
<tr>
<td>Lisa Garcia</td>
<td>1/15/2013</td>
<td>1/29/2013</td>
<td>In-Person</td>
<td>Clinic</td>
<td>3</td>
<td>Yes</td>
<td>Yes</td>
<td>No Change</td>
</tr>
</tbody>
</table>

### Evidence of Depression CAREPATH Effectiveness

---

**Evidence of Depression CAREPATH Effectiveness**

---
Impact of Training in Depression Assessment

- Three CHHAs (Westchester County, NY)
- Randomized nurses to
  - Assessment Training vs.
  - Usual Practice
- Research Assessments of patients
- Compared outcomes

Training in Depression Assessment: Impact on Appropriate Care

Bruce ML et al. J Am Geriatric Soc. 2007
Impact of Depression CAREPATH

- Does the Depression CAREPATH work with research support?
- Does the Depression CAREPATH work with only long distance support?
- Impact on
  - Nursing practice
  - Patient clinical outcomes
  - Costs / burden to agency

Depression CAREPATH: Randomized Effectiveness Trial

- NIH-funded randomized trial
- Six CHHAs
- Variation in:
  - Size
  - Urban vs. Rural
  - Region of Country
  - Independent vs. Hospital based

R01 MH082425, PI: Bruce
Home Healthcare: Randomized Trial of Intervention

- Triumph Home Care
  Livonia, Michigan
- Visiting Nurse Association & Hospice of Vermont/NH
- Baptist Home Health Network
  Little Rock/rural Arkansas
- United Homecare
  Miami, Florida
- Penn Home Care & Hospice
  Greater Philadelphia, PA
- Montefiore Home Care
  The Bronx, New York

**Depression CAREPATH: Randomized Trial**

- **All Agencies**: Implementation Support
- **Randomization by Nurse Team (N=22)**
  - **All Teams**: Training in depression assessment
  - **Intervention Teams also had**:
    - In-person training in Depression CAREPATH
    - Training in use of software support
    - Long distance consultation with nurse supervisors
### Data Sources for NIH-Funded Randomized Trial of Depression CAREPATH

- 306 Patients with depressed mood or lack of interest (M0590/M0600 or M1730)
- Recruited for Home Interview
- Telephone Interviews
  - Immediately following home interview
  - 3, 6 and 12 months follow-up
- Depression Severity clinically (HAMD)

---

### Depression Severity at Start of Care
(Research Assessment Hamilton Depression Rating Scale)

<table>
<thead>
<tr>
<th></th>
<th>Hamilton Depression Rating Scale (HAM-D)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Usual Care</td>
</tr>
<tr>
<td>All (N=306)</td>
<td>14.3</td>
</tr>
<tr>
<td>HAM-D &gt; 10 (N=208)</td>
<td>18.8</td>
</tr>
</tbody>
</table>

* P<.05
### High HAM-D Sample Characteristics (N=208)

<table>
<thead>
<tr>
<th></th>
<th>Usual Care (n=86)</th>
<th>CAREPATH (n=122)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>76.6</td>
<td>75.9</td>
</tr>
<tr>
<td>Female</td>
<td>71.9%</td>
<td>68.9%</td>
</tr>
<tr>
<td>Education (years)</td>
<td>12.0</td>
<td>11.8</td>
</tr>
<tr>
<td>Black/Other</td>
<td>17.4%</td>
<td>20.6%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>11.6%</td>
<td>18.9%</td>
</tr>
<tr>
<td>Married</td>
<td>31.4%</td>
<td>35.3%</td>
</tr>
<tr>
<td>Live Alone</td>
<td>51.2%</td>
<td>42.6%</td>
</tr>
<tr>
<td>Poverty</td>
<td>38.4%</td>
<td>36.6%</td>
</tr>
<tr>
<td>Cognitive (MMSE) (22-30)</td>
<td>26.7</td>
<td>26.0</td>
</tr>
<tr>
<td>ADL Disabilities (0-6)</td>
<td>1.4</td>
<td>1.7</td>
</tr>
<tr>
<td>IADL Disabilities (0-6)</td>
<td>3.2</td>
<td>3.6 *</td>
</tr>
<tr>
<td>Mobility Disabilities (0-3)</td>
<td>2.1</td>
<td>2.3</td>
</tr>
<tr>
<td>Medical Conditions (0-15)</td>
<td>6.2</td>
<td>6.7</td>
</tr>
</tbody>
</table>

### Randomized Trial of 235 Depressed Patients: Change in Depression Severity

(Independent research assessments)

![Graph showing change in depression severity over 12 months for CAREPATH and Control groups.](image-url)
Next Steps

RESEARCH TRANSLATION SPECTRUM

Basic Science (Discoveries from multiple disciplines) \( \rightarrow \) Clinical Research (Tests of Promising Interventions) \( \rightarrow \) Effectiveness Research (Real world settings and heterogeneous populations)

We “HOPE” that research will trickle down to real world practice
NEXT STEP IN THE RESEARCH TRANSLATION SPECTRUM

**Basic Science**  (Discoveries from multiple disciplines) -> **Clinical Research**  (Tests of Promising Interventions) -> **Effectiveness Research**  (Real world settings and heterogeneous populations)

**Implementation Research**  (Tests of Strategies to increase use of Effective Interventions)

---

**Depression CAREPATH Implementation**

- Until now, agency by agency implementation support
- How do you increase the reach of this support?
- Develop long distance resources
- Platform: MentalHealthTrainingNetwork.org
  - E-training (PHQ, CAREPATH)
  - Downloadable tool kits and patient educations
  - Webinars and Posted mini-lectures
  - Telephone consultations
Impact of Long Distance Support for Depression CAREPATH

- **NIH-funded Pilot Study**
  - 2 Agencies (Ohio, Florida) with nine sites
  - Long distance implementation support by Cornell and Brightree/CareAnyware

- **Outcomes**
  - Impact on nursing practice
  - Impact on patient clinical outcomes

Implementation Feedback
(Administrators)

- **Nurse Training**: Webinars went very well -- our nurses are used to technology and online trainings.
- **Benchmark Reports**: The managers use them to work with the nurses on an individual level regarding patients.
- **Suicide Risk Protocol**: It was not difficult to implement; the hardest part was deciding whose phone # to use for after hours calls
Change in Depressive Symptoms
HH Patients (N=84) with PHQ>10 at Start-of-Care
Hospitalization

HH Patients (N=84) with PHQ≥10 at Start-of-Care

<table>
<thead>
<tr>
<th>Percent Hospitalized</th>
<th>Pre-CAREPATH</th>
<th>CAREPATH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>26.7%</td>
<td>16.3%</td>
</tr>
</tbody>
</table>

Current Research: NIH-funded Trial of Long Distance Support for Depression CAREPATH

- 160 agency-randomized trial
- >5,000 depressed patients
- Collaboration between Cornell & Brightree/CareAnyware
- Tests effectiveness on care and clinical outcomes
- Examines agency costs (e.g., productivity, burden)
Depression CAREPATH Resources Available to everyone

MentalHealthTrainingNetwork.org

How to Use Depression CAREPATH Resources

• Take a look at the website:
  • Simply refer clinicians to training (CEUs)
    or
  • Use tools to develop in-service +/- or QI initiative

• Contact us through:
  • WEBSITE: MentalHealthTrainingNetwork.org
  • EMAIL: DepressionCAREPATH@med.cornell.edu
In Closing

• Depression in HH:
  • Is pervasive & burdensome
  • Undermines all care
  • Increase risks of falls and hospitalization
  • Like other chronic diseases, responds to care management (DCM)

• Depression CAREPATH is a feasible DCM model

• Evidence that with depressed HH patients, the Depression CAREPATH:
  • Reduces depressive symptoms
  • Reduces hospitalization.

Thank You and Questions