Evidence-Based Behavioral Health Integration

A New Perspective on Chronic Care

Erik Vanderlip MD MPH
Assistant Professor
University of Oklahoma School of Community Medicine
Medical Informatics and Psychiatry
Disclosures: With respect to the following presentation, I have no financial or monetary conflicts of interest, pharmaceutical industry ties or Swiss bank accounts. I will not be discussing the use of any off-label treatments, therapies, medical devices or scooters. I won’t be discussing drugs to make people feel better. I’ll be discussing people making people feel better. I don’t own any people. My wife owns me.
my bosses...
Who am I?
Roots: Me and Gerry Clancy, Oklahoma
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These materials provided for reference use at the 43rd Annual Family Medicine Refresher Course for the Family Physician.
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Erik Vanderlip
American, 1979 – Present

Integration of Primary Care and Behavioral Health, 2011
Finger on iPad
Exhibit 1
DEPRESSION IS BOTH A CAUSE AND EFFECT OF DIABETES.

Dr. Wayne Katon

Wayne Katon, MD
Professor of Psychiatry
Director of Health Services and Epidemiology
University of Washington, Seattle

us and them

http://www.americashealthrankings.org/states

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Who am I?

...really just a community psychiatrist...
Evidence-Based Behavioral Health Integration

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What are some current models for better integrating mental health and primary care services?
...the most effective talks seem to be those that emphasize practical issues with bottom-line advice...
Objectives

I have 2 objectives with this talk.

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What’s in the (final) Mix?

1) **Applicable**: Common problems
2) **Disable**: Directly Effect Health/QoL
3) **Relatable**: Interdependent
4) **Changeable**: Treatment Exists
5) **Doable**: “Measurable, Screenable, Trackable, Reliable”

**Biological**:
- A1c
- SBP
- LDL
- BMI
- Viral Load
- FEV/Peak Flow
- Questionnaire?

**Sociological**:
- Residential Time-Line Feed-Back Scale
- Employment Measure
- WHO-DAS
- Legal
- Financial
- Interpersonal Relations
- Social Support Questionnaire
- Recovery Instrument (Milestones)
- Patient-Developed Scales

---

<table>
<thead>
<tr>
<th>Patient</th>
<th>PHQ-9</th>
<th>Cigs/Day</th>
<th>A1c</th>
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The Chronic Care Model

Community
- Resources and Policies
  - Self-Management Support

Health Systems
- Organization of Health Care
  - Delivery System Design
  - Decision Support
  - Clinical Information Systems

Improved Outcomes

Informed, Activated Patient

Productive Interactions

Prepared, Proactive Practice Team

Developed by The MacColl Institute
® ACP-ASIM Journals and Books


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Why discuss the chronic care model?
We are living with and dying of chronic conditions.

We are living with and dying of chronic conditions.

<table>
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<tr>
<th>Disease or injury</th>
<th>Mean rank (95% UI)</th>
<th>1990</th>
<th>Disease or injury</th>
<th>Mean rank (95% UI)</th>
<th>2010</th>
<th>Median change, % (95% UI)</th>
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<td>1 (1-1)</td>
<td>1</td>
<td>1 Ischemic heart disease</td>
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<td>-19 (-23 to -7)</td>
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<td>2.8 (2-6)</td>
<td>2</td>
<td>2 Chronic obstructive pulmonary disease</td>
<td>2.5 (2-4)</td>
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<td>3.9 (2-7)</td>
<td>3</td>
<td>3 Low back pain</td>
<td>4.4 (2-10)</td>
<td>25 (14 to 38)</td>
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</tr>
<tr>
<td>4 Road injury</td>
<td>4.2 (2-7)</td>
<td>4</td>
<td>4 Lung cancer</td>
<td>4.4 (2-8)</td>
<td>4 (-6 to 18)</td>
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<tr>
<td>5 Stroke</td>
<td>4.9 (2-7)</td>
<td>5</td>
<td>5 Major depressive disorder</td>
<td>4.9 (2-10)</td>
<td>43 (9 to 83)</td>
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<td>5.1 (2-8)</td>
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<td>6 Other musculoskeletal</td>
<td>5.5 (3-8)</td>
<td>34 (24 to 45)</td>
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<td>7.2 (3-11)</td>
<td>7</td>
<td>7 Stroke</td>
<td>7.3 (5-10)</td>
<td>0 (-8 to 7)</td>
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<td>8 Diabetes</td>
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<td>58 (43 to 71)</td>
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<td>10 Drug use disorders</td>
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<td>11.9 (7-18)</td>
<td>12</td>
<td>12 Alzheimer disease</td>
<td>11.3 (8-14)</td>
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<td>13.6 (9-21)</td>
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<td>13 Anxiety disorders</td>
<td>12.1 (8-15)</td>
<td>21 (5 to 40)</td>
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<td>13.6 (9-19)</td>
<td>14</td>
<td>14 Self-harm</td>
<td>14.6 (12-21)</td>
<td>6 (-13 to 18)</td>
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<tr>
<td>15 Preterm birth complications</td>
<td>14.0 (10-18)</td>
<td>15</td>
<td>15 Falls</td>
<td>17.0 (14-24)</td>
<td>58 (29 to 84)</td>
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<td>16 Lower respiratory tract infections</td>
<td>15.9 (13-19)</td>
<td>16</td>
<td>16 Cirrhosis</td>
<td>17.0 (14-25)</td>
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<td>17 Chronic kidney disease</td>
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<td>18 Colorectal cancer</td>
<td>18.5 (16-22)</td>
<td>18</td>
<td>18 Colorectal cancer</td>
<td>19.3 (14-24)</td>
<td>3 (-6 to 42)</td>
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<tr>
<td>19 Breast cancer</td>
<td>18.8 (17-21)</td>
<td>19</td>
<td>19 Alcohol use disorders</td>
<td>20.0 (14-27)</td>
<td>26 (-1 to 59)</td>
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</tr>
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<td>20.0 (16-24)</td>
<td>20</td>
<td>20 Lower respiratory tract infections</td>
<td>20.7 (15-25)</td>
<td>-13 (-24 to 9)</td>
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<td>21.9 (18-25)</td>
<td>21</td>
<td>21 Breast cancer</td>
<td>21.9 (18-26)</td>
<td>-2 (-9 to 7)</td>
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<tr>
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<td>22.4 (16-29)</td>
<td>22</td>
<td>22 Interpersonal violence</td>
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<td>-26 (-15 to 3)</td>
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<td>23 Asthma</td>
<td>22.9 (15-33)</td>
<td>23</td>
<td>23 Preterm birth complications</td>
<td>22.7 (16-27)</td>
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<td>24 Asthma</td>
<td>22.7 (14-34)</td>
<td>14 (6 to 24)</td>
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<td>56 (28 to 88)</td>
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<td>26 Other cardiovascular and circulatory</td>
<td>24.2 (19-28)</td>
<td>27 (16 to 40)</td>
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<tr>
<td>27 Chronic kidney disease</td>
<td>28.0 (24-31)</td>
<td>27</td>
<td>27 Schizophrenia</td>
<td>28.4 (19-37)</td>
<td>29 (17 to 42)</td>
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<td>28 Migraine</td>
<td>29.2 (22-38)</td>
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<td>28 Migraine</td>
<td>28.5 (20-37)</td>
<td>19 (5 to 34)</td>
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<tr>
<td>29 Congenital anomalies</td>
<td>30.1 (26-33)</td>
<td>29</td>
<td>29 Congenital anomalies</td>
<td>28.9 (25-33)</td>
<td>-26 (-34 to -3)</td>
<td></td>
</tr>
<tr>
<td>30 Cardiomyopathy</td>
<td>30.5 (25-35)</td>
<td>30</td>
<td>30 Cardiomyopathy</td>
<td>30.8 (25-35)</td>
<td>6 (-7 to 63)</td>
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<tr>
<td>31 Hypertensive heart disease</td>
<td>30.9 (22-40)</td>
<td>31</td>
<td>31 Hypertensive heart disease</td>
<td>32.3 (27-37)</td>
<td>3 (-9 to 19)</td>
<td></td>
</tr>
<tr>
<td>32 Schizophrenia</td>
<td>31.0 (23-39)</td>
<td>32</td>
<td>32 Schizophrenia</td>
<td>35.2 (32-39)</td>
<td>-61 (-66 to -55)</td>
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Mental illnesses AND unhealthy behaviors account for greatest burden of disease.

Behavioral health conditions account for the largest proportion of years of productive life lost (YPLL).

Martin et al., Lancet. 2007; 370:859-877
Leading Determinants of Overall Health are Behavioral

- Behavioral: 40%
- Genetic: 30%
- Socioeconomic: 15%
- Environment: 10%
- Health Care: 5%

DIABETES

The quintessential chronic disease.
Iterations of the Chronic Care Model: “Collaborative Care”

1995 “CC” → 2001 IMPACT → 2010 TEAMcare

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Ahead of the game...

Collaborative Management to Achieve Treatment Guidelines

Impact on Depression in Primary Care

Wayne Katon, MD; Michael Von Korff, ScD; Elizabeth Lin, MD, MPH; Edward Walker, MD; Greg E. Simon, MD, MPH; Terry Bush, PhD; Patricia Robinson, PhD; Joan Russo, PhD

**Objective.**—To compare the effectiveness of a multifaceted intervention in patients with depression in primary care with the effectiveness of “usual care” by the primary care physician.

**Design.**—A randomized controlled trial among primary care patients with major depression or minor depression.

**Patients.**—Over a 12-month period a total of 217 primary care patients who were recognized as depressed by their primary care physicians and were willing to take antidepressant medication were randomized, with 91 patients meeting criteria for major depression and 126 for minor depression.

**Interventions.**—Intervention patients received increased intensity and frequency of visits over the first 4 to 6 weeks of treatment (visits 1 and 3 with a primary

SIGNIFICANT advances in medical therapy are not always reflected in everyday clinical practice. Translating a treatment’s biomedical efficacy into practical effectiveness often requires significant changes in the knowledge and attitudes of both physicians and patients, as well as changes in the organization of health care delivery. Efforts to develop guidelines for clinical practice are a response to this gap between knowledge and practice.

1026 JAMA, April 5, 1995—Vol 273, No. 13

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## Billboard Year-End Hot 100 singles of 1995

From Wikipedia, the free encyclopedia

This is a list of *Billboard* magazine’s Top Hot 100 songs of 1995.[1]

<table>
<thead>
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<th>№</th>
<th>Title</th>
<th>Artist(s)</th>
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<td>1</td>
<td>&quot;Gangsta’s Paradise&quot;</td>
<td>Coolio featuring L.V.</td>
</tr>
<tr>
<td>2</td>
<td>&quot;Waterfalls&quot;</td>
<td>TLC</td>
</tr>
<tr>
<td>3</td>
<td>&quot;Creep&quot;</td>
<td>TLC</td>
</tr>
<tr>
<td>4</td>
<td>&quot;Kiss from a Rose&quot;</td>
<td>Seal</td>
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<tr>
<td>5</td>
<td>&quot;On Bended Knee&quot;</td>
<td>Boyz II Men</td>
</tr>
<tr>
<td>6</td>
<td>&quot;Another Night&quot;</td>
<td>Real McCoy</td>
</tr>
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<td>7</td>
<td>&quot;Fantasy&quot;</td>
<td>Mariah Carey</td>
</tr>
<tr>
<td>8</td>
<td>&quot;Take a Bow&quot;</td>
<td>Madonna</td>
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<td>9</td>
<td>&quot;Don't Take It Personal (Just One of Dem Days)&quot;</td>
<td>Monica</td>
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<tr>
<td>10</td>
<td>&quot;This Is How We Do It&quot;</td>
<td>Montell Jordan</td>
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</table>
“Core Principles of Effective Collaborative Care”

Patient-Centered Care Teams

• Team-based care: effective collaboration between PCPs and Behavioral Health Providers.

Population-Based Care

• Patients tracked in a registry: no one ‘falls through the cracks’.

Measurement-Based “Treat to Target”

• Measurable treatment goals clearly defined and tracked for each patient
• Treatments are actively changed until the clinical goals are achieved – “treat to target”

Evidence-Based Care

• Treatments used are ‘evidence-based’
• Pharmacology, brief psychotherapeutic interventions, models

IMPACT Collaborative Care Model *Incarnate*

Collaborative Team Approach

- PCP
- Patient
- BHP/Care Manager
- Consulting Psychiatrist
- Other Behavioral Health Clinicians
- Substance Treatment, Vocational Rehabilitation, CMHC, Other Community Resources

Core Program

Additional Clinic Resources

Outside Resources

http://uwaims.org
The IMPACT Data

Doubles Effectiveness of Care for Depression

Figure 1: Percentage improvement in depression using IMPACT model and care as usual

## IMPACT Data, Savings

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>4-year costs in $</th>
<th>Intervention group cost in $</th>
<th>Usual care group cost in $</th>
<th>Difference in $</th>
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<td>Outpatient mental health costs</td>
<td>661</td>
<td>558</td>
<td>767</td>
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<td>Pharmacy costs</td>
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<td>Other outpatient costs</td>
<td>14,306</td>
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<td>Inpatient medical costs</td>
<td>8,452</td>
<td>7,179</td>
<td>9,757</td>
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<td>Inpatient mental health / substance abuse costs</td>
<td>114</td>
<td>61</td>
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<td>Total health care cost</td>
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<td><strong>29,422</strong></td>
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Iterations of the Chronic Care Model: “Collaborative Care”

- 1995: “CC”
- 2001: IMPACT
- 2010: TEAMcare
The evolution of collaborative care to envelop multiple chronic conditions.
# IMPACT 2.0 Incarnate

Screenshot from CMTS/MHIP

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Registries of patients.

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<th>Initial</th>
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<th>BP</th>
<th>HbA1c</th>
<th>LDL</th>
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<td>BL</td>
<td>BL</td>
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<td></td>
<td></td>
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<td>Now</td>
<td>Now</td>
<td>Now</td>
<td>Now</td>
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<tr>
<td>NSH</td>
<td></td>
<td>5/19/08</td>
<td>19</td>
<td>141/69</td>
<td>127/77</td>
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<td>160/98</td>
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<td>209/119</td>
<td>126/76</td>
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<td>LYN</td>
<td></td>
<td>8/23/07</td>
<td>14</td>
<td>149/71</td>
<td>111/58</td>
<td>8.1</td>
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<tr>
<td>Name</td>
<td>A1c (initial)</td>
<td>A1c (recent)</td>
<td>PHQ9 Initial</td>
<td>PHQ9 Recent</td>
<td>SBP Initial</td>
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<tr>
<td>Mary (new)</td>
<td>9.5</td>
<td>--</td>
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<td>--</td>
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<td>John</td>
<td>10.7</td>
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<td><strong>9.4</strong></td>
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<td><strong>13</strong></td>
<td>163</td>
<td>132</td>
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<tr>
<td>Bess</td>
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<td>7.4</td>
<td>25</td>
<td>8</td>
<td>149</td>
<td>137</td>
</tr>
</tbody>
</table>
Collaborative Care for Patients with Depression and Chronic Illnesses

Wayne J. Katon, M.D., Elizabeth H.B. Lin, M.D., M.P.H., Michael Von Korff, Sc.D., Paul Ciechanowski, M.D., M.P.H., Evette J. Ludman, Ph.D., Bessie Young, M.D., M.P.H., Do Peterson, M.S., Carolyn M. Rutter, Ph.D., Mary McGregor, M.S.N., and David McCulloch, M.D.
TEAMcare Data, Data on Collaborative Care

When treated in harmony with mental health, chronic physical health improves significantly\(^1\)

- **Improved Diabetes\(^1\)**
  - Mean of HbA1c
    - Baseline: 9.1 (105)
    - 6 months: 7.4 (99)
    - 12 months: 7.3 (101)

- **Improved BP\(^1\)**
  - Mean of Systolic BP
    - Baseline: 135.7 (105)
    - 6 months: 131.9 (102)
    - 12 months: 131.0 (101)

- **Improved Cholesterol\(^1\)**
  - Mean of LDL
    - Baseline: 109.4 (103)
    - 6 months: N/A
    - 12 months: 101.4 (90)

**Overall quality of life and physical health improve consistently\(^2\)**

<table>
<thead>
<tr>
<th>Physical Quality of Life</th>
<th>Control</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Druce et al., 2001 (86)</td>
<td>0.66</td>
<td>0.29 1.02</td>
</tr>
<tr>
<td>Richards et al., 2008 (69)</td>
<td>0.03</td>
<td>0.45 0.51</td>
</tr>
<tr>
<td>Rovet et al., 2000 (79)</td>
<td>0.30</td>
<td>0.03 0.61</td>
</tr>
<tr>
<td>Kilbourne et al., 2003 (81)</td>
<td>0.25</td>
<td>0.27 0.77</td>
</tr>
<tr>
<td>Kroenke et al., 2009 (71)</td>
<td>0.46</td>
<td>0.21 0.71</td>
</tr>
<tr>
<td>Druss et al., 2010 (93)</td>
<td>0.21</td>
<td>0.01 0.60</td>
</tr>
<tr>
<td>Subtotal ((\text{H}^2) squared=31.1%, (p=0.203))</td>
<td>0.33</td>
<td>0.17 0.49</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overall Quality of Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unützer et al., 2002 (51)</td>
</tr>
<tr>
<td>van Orden et al., 2009 (52)</td>
</tr>
<tr>
<td>Subtotal ((\text{H}^2) squared=41.8%, (p=0.190))</td>
</tr>
</tbody>
</table>


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Intelligent Integration Breeds Synergy

After 12 months of care, multi-condition collaborative care improved patient satisfaction in depression AND diabetes care.


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Collaborative Care: Evidence Beyond Evidence

“Seventy-nine RCTs (including 90 relevant comparisons) involving 24,308 participants in the review.”

“Collaborative care is associated with significant improvement in depression and anxiety outcomes compared with usual care, and represents a useful addition to clinical pathways for adult patients with depression and anxiety.”

Archer, 2012, Cochrane
What are some current models for better integrating mental health and primary care services?
Two models to choose from...

BHC  CC
BHC: Co-Located Behavioral Health
(Helps Reduce Stigma!)

- Behavioral health in the same space with primary care
- Involvement by referral
- Separate behavioral health and medical treatment plans

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Access improved at first</td>
<td>• Referrals don’t show</td>
</tr>
<tr>
<td>• Improved patient &amp; provider satisfaction</td>
<td>• Case-loads fill up</td>
</tr>
<tr>
<td>• Cost effective (cheaper to implement)</td>
<td>• Slow primary care physician learning curve</td>
</tr>
<tr>
<td>• Improved clinical outcomes?</td>
<td>• Communication still difficult</td>
</tr>
</tbody>
</table>
Collaborative Care

- Behavioral health not *necessarily* in the same space with primary care
- Involvement through caseload review
- Integrated treatment plans

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Access greatly improved</td>
<td>• More complicated intervention</td>
</tr>
<tr>
<td>• Improved patient &amp; provider satisfaction</td>
<td>• Workforce retraining required</td>
</tr>
<tr>
<td>• Cost effective</td>
<td>• Needs top-down support</td>
</tr>
<tr>
<td>• Improved clinical outcomes!</td>
<td>• Payment reform is lagging</td>
</tr>
<tr>
<td>• Increased learning curves</td>
<td>• Not all recommendations are passed through</td>
</tr>
<tr>
<td>• True to chronic care model</td>
<td></td>
</tr>
</tbody>
</table>

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In Summation  CC is hard to implement but highly effective.

Cost is often a limiting factor.
Cost-Effectiveness of On-Site Versus Off-Site Collaborative Care for Depression in Rural FQHCs

Jeffrey M. Pyne, M.D., John C. Fortney, Ph.D., Sip Mouden, M.S., C.R.C., Liya Lu, M.S., Teresa J. Hudson, Pharm.D., Dinesh Mittal, M.D.

Objective: Collaborative care for depression in primary care settings is effective and cost-effective. However, there is minimal evidence to support the choice of on-site versus off-site models. This study examined the cost-effectiveness of on-site practice-based collaborative care (PBCC) versus off-site telemedicine-based collaborative care (TBCC) for depression in federally qualified health centers (FQHCs).

Methods: In a multisite, randomized, pragmatic comparative cost-effectiveness trial, 19,285 patients were screened for depression, 2,863 (14.8%) screened positive, and 364 were enrolled. Telephone interview data were collected at baseline and at six, 12, and 18 months. Base case analysis used Arkansas FQHC health care costs, and secondary analysis used national cost estimates. Effectiveness measures were depression-free days and quality-adjusted life years (QALYs) derived from depression-free days, the 12-Item Short-Form Survey, and the Quality of Well-Being (QWB) Scale. Non-parametric bootstrap with replacement methods were used to generate an empirical joint distribution of incremental costs and QALYs and acceptability curves.

Results: The TBCC intervention resulted in more depression-free days and QALYs but at a greater cost than the PBCC intervention. The disease-specific (depression-free day) and generic (QALY) incremental cost-effectiveness ratios (ICERs) were below their respective ICER thresholds for implementation, suggesting that the TBCC intervention was more cost effective than the PBCC intervention.

Conclusions: These results support the cost-effectiveness of TBCC in medically underserved primary care settings. Information about whether to insource (make) or outsource (buy) depression care management is important, given the current interest in patient-centered medical homes, value-based purchasing, and bundled payments for depression care.

Psychiatric Services 2015; 66:491–499; doi: 10.1176/appi.ps.201400186
separately payable service. However, in contrast to the CCM code, the new codes might be reported based on the resources involved in professional work, instead of the resource costs in terms of clinical staff time. The codes might also apply broadly to patients in a number of different circumstances, and would not necessarily make reporting the code(s) contingent on particular business models or technologies for medical practices. We are interested in stakeholder comments on the kinds of services that involve the type of cognitive work described above and whether or not the creation of particular codes might improve the accuracy of the relative values used for such services on the PFS. Finally, we are interested in receiving information from stakeholders on the overlap between the kinds of cognitive resource costs discussed above and those already accounted for through the currently payable codes that describe CCM and other care management services.

We strongly encourage stakeholders to comment on this topic in order to assist us in developing potential proposals to address these issues through rulemaking in CY 2016 for implementation in CY 2017. We anticipate using this approach, which would parallel our multi-year approach for implementing CCM and TCM services, in order to facilitate broader input from stakeholders regarding details of implementing such codes, including their structure and description, valuation, and any requirements for reporting requirements could be implemented in a way that minimizes burden on providers. We strongly encourage stakeholders to comment on this topic in order to assist us in developing potential proposals to address these issues through rulemaking in CY 2016 for implementation in CY 2017. We anticipate using this approach, which would parallel our multi-year approach for implementing CCM and TCM services, in order to facilitate broader input from stakeholders regarding details of implementing such codes, including their structure and description, valuation, and any requirements for reporting.

a. Collaborative Care Models for Beneficiaries With Common Behavioral Health Conditions

In recent years, many randomized controlled trials have established an evidence base for an approach to caring for patients with common behavioral health conditions called “Collaborative Care.” Collaborative care typically is provided by a primary care team, consisting of a primary care provider and a care manager, who works in collaboration with a psychiatric consultant, such as a psychiatrist. Care is directed by the primary care team and includes structured care management with regular assessments of clinical status using validated tools and modification of treatment as appropriate. The psychiatric consultant

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Setting Value-Based Payment Goals — HHS Efforts to Improve U.S. Health Care

Sylvia M. Burwell

Now that the Affordable Care Act (ACA) has expanded health care coverage and made it affordable to many more Americans, we have the opportunity to shape the way care is delivered and improve the quality of care systemwide, while helping to reduce the growth of health care costs. Many efforts have already been initiated on these fronts, leveraging across settings, and greater attention by providers to population health; and harnessing the power of information to improve care for patients.

2018. Perhaps even more important, our target is to have 30% of Medicare payments tied to quality or value through alternative payment models by the end of 2016, and 50% of payments by the end of 2018. Alternative payment models include accountable care organizations (ACOs) and bundled-payment arrangements under which health care providers are...
“Perhaps even more important, our target is to have 30% of Medicare payments tied to quality or value through alternative payment models by the end of 2016, and 50% of payments by the end of 2018. Alternative payment models include accountable care organizations (ACOs) and bundled-payment arrangements under which health care providers are accountable for the quality and cost of the care they deliver to patients.”

Setting Value-Based Payment Goals — HHS Efforts to Improve U.S. Health Care

Sylvia M. Burwell

Now that the Affordable Care Act (ACA) has expanded health care coverage and made it affordable to many more Americans, we have the opportunity to shape the way care is delivered and improve the quality of care systemwide, while helping to reduce the growth of health care costs. Many efforts have already been initiated on these fronts, leveraging across settings, and greater attention by providers to population health; and harnessing the power of information to improve care for patients.
Though not prime time just yet, CC is growing.
...the most effective talks seem to be those that emphasize practical issues with bottom-line advice...
Objectives

I have 2 objectives with this talk.
What’s in the (final) Mix?

1) **Applicable**: Common problems
2) **Disable**: Directly Effect Health/QoL
3) **Relatable**: Interdependent
4) **Changeable**: Treatment Exists
5) **Doable**: “*Measurable, Screenable, Trackable, Reliable*”

### (psycho)

#### Psychological:
- PHQ-9
- PCL-C
- GAD-7
- SMI: PANSS, YMRS

### (bio)

#### Biological:
- A1c
- SBP
- LDL
- BMI
- Viral Load
- FT/FEV/Peak Flow
- Pain Questionnaire?

### (social)

#### Sociological:
- Residential Time-Line Feed-Back Scale
- Employment Measure
- WHO-DAS
- Legal
- Financial
- Interpersonal Relations
- Social Support Questionnaire
- Recovery Instrument (Milestones)
- Patient-Developed Scales

<table>
<thead>
<tr>
<th>Patient</th>
<th>PHQ-9</th>
<th>Cigs/Day</th>
<th>A1c</th>
<th>SBP</th>
<th>LDL</th>
<th>Housing Status</th>
<th>Recovery Scale</th>
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<tr>
<td>B Obama</td>
<td>20</td>
<td>20</td>
<td>6.3</td>
<td>131</td>
<td>105</td>
<td>55</td>
<td>13</td>
</tr>
<tr>
<td>M Romn</td>
<td>5</td>
<td>0</td>
<td>5.5</td>
<td>140</td>
<td>138</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>G Wash</td>
<td>10</td>
<td>10</td>
<td>10.0</td>
<td>100</td>
<td>100</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

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“What gets paid attention to, gets paid attention to.”
### Getting There

<table>
<thead>
<tr>
<th>Core Principles of Effective Collaborative Care</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient-Centered Care Teams</strong></td>
</tr>
<tr>
<td>• Team-based care: effective collaboration between PCPs and Behavioral Health Providers</td>
</tr>
</tbody>
</table>

### Population-Based Care
- Patients tracked in a registry: no one ‘falls through the cracks’.

### Measurement-Based “Treat to Target”
- Measurable treatment goals clearly defined and tracked for each patient
- Treatments are actively changed until the clinical goals are achieved – “treat to target”

### Evidence-Based Care
- Treatments used are ‘evidence-based’
- Pharmacology, brief psychotherapeutic interventions, models

---

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<table>
<thead>
<tr>
<th>Name</th>
<th>A1c (initial)</th>
<th>A1c (recent)</th>
<th>PHQ9 Initial</th>
<th>PHQ9 Recent</th>
<th>SBP Initial</th>
<th>SBP Recent</th>
<th>Non-HDL Initial</th>
<th>Non-HDL Recent</th>
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<tbody>
<tr>
<td>Mary (new)</td>
<td>9.5</td>
<td>--</td>
<td>21</td>
<td>--</td>
<td>125</td>
<td>--</td>
<td>115</td>
<td>--</td>
</tr>
<tr>
<td>Todd</td>
<td>9.2</td>
<td>7.3</td>
<td>15</td>
<td>4</td>
<td>145</td>
<td>135</td>
<td>245</td>
<td>150 (red)</td>
</tr>
<tr>
<td>John</td>
<td>10.7</td>
<td>8.2</td>
<td>13</td>
<td>6</td>
<td>155</td>
<td>138</td>
<td>195</td>
<td>122</td>
</tr>
<tr>
<td>Gregor</td>
<td>8.9</td>
<td>7.1</td>
<td>22</td>
<td>11</td>
<td>135</td>
<td>137</td>
<td>168</td>
<td>110</td>
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<td>9.4</td>
<td>18</td>
<td>13</td>
<td>163</td>
<td>132</td>
<td>213</td>
<td>145 (red)</td>
</tr>
<tr>
<td>Bess</td>
<td>9.8</td>
<td>7.4</td>
<td>25</td>
<td>8</td>
<td>149</td>
<td>137</td>
<td>218</td>
<td>125</td>
</tr>
</tbody>
</table>
A demonstration of population-focused care and “treat-to-target”.

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<tr>
<th>Age (Years)</th>
<th>Smoking</th>
<th>SBP</th>
<th>BMI</th>
<th>Non-HDL Cholesterol</th>
<th>A1c</th>
<th>Glucose</th>
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<tr>
<td>63</td>
<td>N</td>
<td>164</td>
<td>54.42</td>
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<td>8.10%</td>
<td>237</td>
</tr>
<tr>
<td>43</td>
<td>N</td>
<td>160</td>
<td>34.89</td>
<td>139</td>
<td>9.20%</td>
<td>114</td>
</tr>
<tr>
<td>53</td>
<td>Y</td>
<td>154</td>
<td>40</td>
<td>148</td>
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<tr>
<td>23</td>
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<td>37.71</td>
<td>154</td>
<td>5.80%</td>
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<tr>
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<tr>
<td>60</td>
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<td>28.37</td>
<td>59</td>
<td>5.50%</td>
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<td>57</td>
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<tr>
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<td>Y</td>
<td>145</td>
<td>48.21</td>
<td>126</td>
<td>6.10%</td>
<td>91</td>
</tr>
<tr>
<td>25</td>
<td>N</td>
<td>144</td>
<td>30.37</td>
<td>187</td>
<td>7.60%</td>
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<tr>
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<td>0</td>
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<td>38</td>
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<td>27.57</td>
<td>90</td>
<td>5.90%</td>
<td>133</td>
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<tr>
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<td>142</td>
<td>48.71</td>
<td>126</td>
<td>9.50%</td>
<td>99</td>
</tr>
<tr>
<td>40</td>
<td>Y</td>
<td>141</td>
<td>33.6</td>
<td>196</td>
<td>5.80%</td>
<td>98</td>
</tr>
<tr>
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<td>95</td>
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<td>72</td>
</tr>
<tr>
<td>60</td>
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<td>140</td>
<td>34.71</td>
<td>193</td>
<td>5.42%</td>
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<td>60</td>
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<td>29.05</td>
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</tr>
<tr>
<td>43</td>
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<td>33.12</td>
<td>127</td>
<td>9.90%</td>
<td>297</td>
</tr>
<tr>
<td>72</td>
<td>Y</td>
<td>138</td>
<td>22.64</td>
<td>177</td>
<td>5.60%</td>
<td>85</td>
</tr>
</tbody>
</table>

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That reminds me!

<story time>
### Six Components of Effective Measurement

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><strong>Measurement alone is not enough; outcomes must be incorporated into the clinical encounter.</strong></td>
</tr>
<tr>
<td>2.</td>
<td><strong>Patient-reported outcomes are more accurate than clinician-reported outcomes.</strong></td>
</tr>
<tr>
<td>3.</td>
<td><strong>Measures must be collected frequently to accurately assess the most recent clinical state.</strong></td>
</tr>
<tr>
<td>4.</td>
<td><strong>Measures must be tightly correlated to the illness state and are typically diagnosis-specific.</strong></td>
</tr>
<tr>
<td>5.</td>
<td><strong>Instruments must be reliable and sensitive to change.</strong></td>
</tr>
<tr>
<td>6.</td>
<td><strong>Methods must be relatively simple to implement and low cost.</strong></td>
</tr>
</tbody>
</table>
Measurement alone is not enough, outcomes must be incorporated into the clinical encounter.

“Bad rulers”
Patient-reported outcomes are more accurate than clinician-reported outcomes.
Measures must be collected frequently to accurately assess the most recent clinical state.
Measures must be tightly correlated to the illness state and are typically diagnosis-specific.
Instruments must be reliable and sensitive to change.
Methods must be relatively simple to implement and low-cost.
### Six Components of Effective Measurement

1. **Measurement alone is not enough; outcomes must be incorporated into the clinical encounter.**

2. **Patient-reported outcomes are more accurate than clinician-reported outcomes.**

3. **Measures must be collected frequently to accurately assess the most recent clinical state.**

4. **Measures must be tightly correlated to the illness state and are typically diagnosis-specific.**

5. **Instruments must be reliable and sensitive to change.**

6. **Methods must be relatively simple to implement and low cost.**
Absolutely NOT a good measure.
What’s in the Mix?  
Current Model

Screenshot from CMTS/MHIP

<table>
<thead>
<tr>
<th>Date</th>
<th>PHQ-9</th>
<th>DEP IMPR</th>
<th>GAD-7</th>
<th>ANX IMPR</th>
<th>MED</th>
<th>CONTINUED CARE PLAN</th>
<th>PSYCH. NOTE</th>
<th>PSYCH. EVAL</th>
<th>ELIGIBLE THRU</th>
<th>NEXT APPT.</th>
<th>MOST RECENT.</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td>98</td>
</tr>
<tr>
<td>8/15/2013</td>
<td>19</td>
<td>13</td>
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<td></td>
<td>✓</td>
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Psychological Constructs/Measures

It’s not by accident...
1) Common problems
2) Directly impact QoL and Health Outcomes and FUNCTIONING
3) Interdependent: Diapression
4) We can change them (apply TREAT TO TARGET guidelines)
5) Easily “able”: “Measurable, Screenable, Trackable, Reliable”
   a. We have good (valid, reliable) instruments for all of these!
What’s in the Mix?
Community/Safety-Net Settings

1) **Applicable**: Common problems
2) **Disable**: Deficits in Functioning
3) **Relatable**: Interdependent
4) **Changeable**: Treatment Exists, “**TTT**”
5) **Doable**: “**Measurable, Screenable, Trackable, Reliable**”

### Biological:
- A1c
- SBP
- LDL
- BMI
- Viral Load
- PFT/FEV/Peak Flow
- Pain Questionnaire?

### Psychological:
- PHQ-9
- PCL-C
- GAD-7
- SMI: PANSS, YMRS/Internal State
- **MMPI**

### Substance Use Disorders:
- Cig Eq./Day
- AUDIT
- Opioid Scale?
- More...

### Sociological:
- Residential Time-Line Feed-Back Scale
- Employment Measure
- WHO-DAS
- Legal
- Financial
- Interpersonal Relations
- Social Support Questionnaire
- Recovery Instrument (Milestones)
- Patient-Developed Scales
What to Include? Psychological

Problem/Morbidity

Psychological:
- Depression
- Trauma, PTSD
SMI: Bipolar, Schizophrenia
Personality Disorders

Substance Use Disorders:
- Tobacco
- Alcohol
- Opiates
- More...

Outcome/Measure

Psychological:
- PHQ-9
- PCL-C
- GAD-7
SMI: PANSS, YMRS/Internal State

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- More...

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What to Include?

**Biological**

**Problem/Morbidity**
- Diabetes
- Hypertension
- Cholesterol
- Obesity
- Hepatitis
- COPD
- Chronic Pain

**Outcome/Measure**
- A1c
- SBP
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What to Include? **Sociological**

**Problem/Morbidity**
- Sociological:
  - Housing
  - Employment
  - Disability
  - Legal
  - Financial
  - Interpersonal
  - Relations
  - Social Support

**Outcome/Measure**
- Sociological:
  - Residential Time-Line Feed-Back Scale
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...the most effective talks seem to be those that emphasize practical issues with bottom-line advice...
**Bottom Line**  Just Start Measuring*

*Something Worth Measuring*

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"Core Principles of Effective Collaborative Care"

**Patient-Centered Care Teams**

- Team-based care: effective collaboration between PCPs and Behavioral Health Providers.

**Population-Based Care**

- Patients tracked in a registry: no one ‘falls through the cracks’.

**Measurement-Based “Treat to Target”**

- Measurable treatment goals clearly defined and tracked for each patient
- Treatments are actively changed until the clinical goals are achieved – “treat to target”

**Evidence-Based Care**

- Treatments used are ‘evidence-based’
- Pharmacology, brief psychotherapeutic interventions, models

The Lexicon of Healthcare Reform

- Motivational Interviewing
- PCMH
- Behavioral Health Homes
- Co-located Care
- Self-Management Support
- SBIRT
- Integrated Care
- Cardiovascular Disease
- Health Information
- Health Behavior Change
- Patient-Centered

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Evidence-Based Behavioral Health Integration

A New Perspective on Chronic Care

Erik Vanderlip MD MPH
Assistant Professor
University of Oklahoma School of Community Medicine
Medical Informatics and Psychiatry
Iterations of the Chronic Care Model: “Collaborative Care”

1995 “CC”  →  2001 IMPACT  →  2010 TEAMcare
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<th>PHQ9 Recent</th>
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**Modularity**

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Questions?