Collaborative Care

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8/10/17
Objectives

• Participants will be able to name three types of integrated care that are not effective based on research

• Participants will be able to list the 5 tenents of collaborative care based on the IMPACT model

• Participants will be able to describe the structural components of evidence-based collaborative care

• Participants will be able list 4 differences between the IMPACT study and the Duke Primary Care Depression Initiative
Collaborative care is:

A program for patients without health insurance where a psychiatrist helps the PCP with diagnosis and treatment of mental illnesses.

A relationship between primary care and psychiatry, such that the psychiatrist provides education and quick curb-side consultation to the primary care provider.

A system for diagnosis and management of mental illness in primary care based on the chronic disease model.

An arrangement where a psychiatrist or psychiatry advanced practice provider has a clinic within the primary care office for easy referral.

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Collaborative Care Is:

A. A program for patients without health insurance where a psychiatrist helps the PCP with diagnosis and treatment of mental illnesses

B. A relationship between primary care and psychiatry, such that the psychiatrist provides education and quick curb-side consultation to the primary care provider

C. A system for diagnosis and management of mental illness in primary care based on the chronic disease model

D. An arrangement where a psychiatrist or psychiatry advanced practice provider has a clinic within the primary care office for easy referral
Collaborative Care Is:

Answer: C

A system for diagnosis and management of mental illness in primary care based on the chronic disease model
What is Integrated Care?

• The combination of primary healthcare and mental health care in one location – NIMH

• The systematic coordination of general and behavioral health care – SAMHSA

• The management and delivery of health services so that clients receive a continuum of preventive and curative services, according to their needs over time and across different levels of the health system - WHO
Collaborative care is a specific type of integrated care.
Why Collaborative Care?
Psychiatric Treatment Shifts to Primary Care

• Deinstitutionalization of mentally ill persons in 1960s
• Primary care coined the *de facto* mental health system as early as the 1970s
• Mental health not covered or affordable for many
• Stigma of going to a psychiatrist

Depression in Primary Care 1980s-90s

• Studies identified that depression is common in primary care (incidence of 5-12%)

• Only 25-50% of patients with depression are diagnosed correctly in primary care, and of those, few receive adequate care

• Antidepressants often not titrated to high enough doses, or were stopped prematurely by patients

• Referrals to psychiatry were not completed in up to 50% of cases

Mental health and substance use disorders are the leading causes of disease burden in the U.S.

Age standardized disability adjusted life years (DALYs) rate per 100,000 population, both sexes, 2013

Total medical services expenditures in US $ billions by disease category, 2013

- Ill-defined conditions: $254
- Circulatory system: $236
- Musculoskeletal: $190
- Respiratory: $161
- Endocrine: $142
- Nervous system: $136
- Neoplasms (Cancer): $127
- Injury and poisoning: $118
- Genitourinary: $114
- Digestive: $114
- Other: $89
- Mental illness: $89
- Infectious disease: $70
- Pregnancy & childbirth complications: $47
- Dermatological: $45

Spending on dental services, nursing homes, and prescriptions that cannot be allocated to a specific disease not included above.

Source: Kaiser Family Foundation analysis of data from Bureau of Economic Analysis Health Care Satellite Account (Blended Account) and National Health Expenditure Data
Growth in per capita spending on mental illness slowed after the Great Recession, while treated prevalence rebounded.

Average annual growth in per capita mental illness spending, pre-, during, and post-Great Recession

<table>
<thead>
<tr>
<th>Per capita spending</th>
<th>Disease-based price index</th>
<th>Treated prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.7%</td>
<td>3.6%</td>
<td>2.0%</td>
</tr>
<tr>
<td>4.8%</td>
<td>2.7%</td>
<td>2.0%</td>
</tr>
<tr>
<td>4.1%</td>
<td>2.0%</td>
<td>2.0%</td>
</tr>
</tbody>
</table>

Cost is the most commonly reported barrier to using mental health services

Annual average percent of adults with any mental illness who had an unmet need for services, by reason for unmet need and race/ethnicity, 2008 - 2012

- **Cost/Insurance**: 58% (White), 53% (Black or African American), 47% (Hispanic)
- **Low perceived need**: 26% (White), 24% (Black or African American), 21% (Hispanic)
- **Prejudice and discrimination**: 28% (White), 28% (Black or African American), 33% (Hispanic)
- **Structural barriers**: 30% (White), 30% (Black or African American), 33% (Hispanic)
- **Did not think services would help**: 10% (White), 6% (Black or African American), 7% (Hispanic)

Source: SAMHSA [http://www.samhsa.gov/data/sites/default/files/MHServicesUseAmongAdults/MHServicesUseAmongAdults.pdf](http://www.samhsa.gov/data/sites/default/files/MHServicesUseAmongAdults/MHServicesUseAmongAdults.pdf)  
Note: * Indicates significant difference by race/ethnicity.
Depression in Primary Care

- Patients with depression in primary care have
  - More unexplained symptoms
  - Greater health care cost and utilization
  - More comorbid medical illness
  - Equal to greater functional impairment compared to common medical illnesses

Changes in the US Mental Health Delivery System

- More healthcare professionals are comfortable treating MH conditions than in the past
- Numerous pharmacologic options available and advertised widely
- Promotion of screening has increased
- Progress made in breaking down stigma for help seeking
- Evidence-based treatment guidelines available

What Didn’t Work Systemically

- Mental health insurance carve outs
- Co-located mental health care (embedded care)
- No uniform system to address positive depression screening
- Relying solely on community psychiatrists for MH care
What Didn’t Work

- Researchers progressively studied what was sufficient for quality depression care
- Educating PCP about screening
- Notifying PCP about patient’s depression diagnosis
- Providing PCP with algorithm for depression management
- Notifying about diagnosis and providing algorithm

IMPACT
Improving Mood: Promoting Access to Collaborative Treatment (IMPACT)

- Population: 1801 older adults (≥60 y/o) with MDD or dysthymia
  - Mean age: 71.2 years
- Setting: 18 primary care clinics from 8 healthcare organizations across 5 states
  - 4 HMOs, 1 VA, 2 University, 1 Private Practice

IMPACT

- Intervention (12 months):
  - Depression Care Specialist (DCS): nurse or psychologist
    - Collaborated with PCP and psychiatrist
    - Obtained psychosocial history from patient
    - Provided education and behavioral activation
    - Helped identify treatment preferences
    - Weekly or biweekly patient contact
  - Weekly meeting: DCS, psychiatrist and PCP
  - Stepped care algorithm
  - Problem Solving Treatment

IMPACT

• Significant outcomes:
  • Higher rates of response (50% reduction) and remission (p<0.5) on SCL-20
  • More likely to use antidepressants or psychotherapy
  • Greater satisfaction with depression care
  • Improved health related function (MCS or SF12)
  • Greater overall QOL (0-10)

• Having more medical comorbidities did not affect outcomes

• Outcomes persisted at 18 and 24 months (NNT 6 and 9)


Improved Satisfaction with Depression Care

(% Excellent, Very Good)

- **Usual Care**
- **Intervention**

<table>
<thead>
<tr>
<th>Time (Month)</th>
<th>Usual Care</th>
<th>Intervention</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>50</td>
<td>50</td>
<td>0.375</td>
</tr>
<tr>
<td>3</td>
<td>60</td>
<td>80</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>12</td>
<td>40</td>
<td>80</td>
<td>&lt;0.001</td>
</tr>
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</table>

Unützer et al, JAMA 2002; 288:2836-2845
Findings Robust Across Diverse Health Care Organizations

TREATMENT RESPONSE
50 % or greater improvement in depression at 12 months

Participating Organizations

Unutzer, et al. JAGS 2003; 51:505-514
Better Physical Function

PCS-12

- Usual Care
- IMPACT

<table>
<thead>
<tr>
<th>Time</th>
<th>Usual Care</th>
<th>IMPACT</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>40.5</td>
<td>41</td>
<td>P=0.35</td>
</tr>
<tr>
<td>3 mos</td>
<td>39.5</td>
<td>40</td>
<td>P&lt;0.01</td>
</tr>
<tr>
<td>6 mos</td>
<td>39</td>
<td>41</td>
<td>P&lt;0.01</td>
</tr>
<tr>
<td>12 mos</td>
<td>38.5</td>
<td>41</td>
<td>P&lt;0.01</td>
</tr>
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</table>

# Four Year Direct Health Care Cost Savings With IMPACT

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>4-year Costs in $US</th>
<th>Integrated Care Service Use in $US</th>
<th>Usual Care Service Use in $US</th>
<th>Savings in $US</th>
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</thead>
<tbody>
<tr>
<td>IMPACT program cost</td>
<td>522</td>
<td>0</td>
<td>522</td>
<td>522</td>
</tr>
<tr>
<td>Outpatient mental health costs</td>
<td>661</td>
<td>558</td>
<td>767</td>
<td>-210</td>
</tr>
<tr>
<td>Pharmacy costs</td>
<td>7,284</td>
<td>6,942</td>
<td>7,636</td>
<td>-694</td>
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<tr>
<td>Other outpatient costs</td>
<td>14,306</td>
<td>14,160</td>
<td>14,456</td>
<td>-296</td>
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<tr>
<td>Inpatient medical costs</td>
<td>8,452</td>
<td>7,179</td>
<td>9,757</td>
<td>-2578</td>
</tr>
<tr>
<td>Inpatient mental health / substance abuse costs</td>
<td>114</td>
<td>61</td>
<td>169</td>
<td>-108</td>
</tr>
<tr>
<td>Total health care cost</td>
<td>31,082</td>
<td>29,422</td>
<td>32,785</td>
<td>-3363</td>
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</tbody>
</table>

PATIENT
Chooses treatment in consultation with providers:
- brief psychotherapy
- medication
- psychiatry referral

PRIMARY CARE PROVIDER (PCP)
- Refers
- Prescribes

CONSULTING PSYCHIATRIST
DEPRESSION CARE MANAGER
- Additional evaluation
- Recommendations back to PCP
What’s So Revolutionary?

- Nurse or psychologist to provide patient education, track outcomes, side effects and medication adherence
- Use of tracking tool (Measurement-based care)
- Development of a registry to manage caseload supervision
- Stepped care approach
- Psychiatric consultant
- Problem-solving therapy, motivational interviewing
- Data sharing between psychiatrist and PCP
A Change in Thinking about MH Treatment

- Population approach to mental health
- Eliminate known barriers to MH care:
  - Don’t have to see the psychiatrist in person
  - No copay
  - Less stigma
- Routine psychiatric consultation to PCP (instead of irregular or none)
- Depression treated without psychiatrist seeing the patient in person
Five Core Principles of Collaborative Care

• Patient centered team care
• Population based care
• Measurement-based treatment to target
• Evidence-based care
• Accountable care
Random-effects meta-analysis of the effect of collaborative care on standardized depression outcomes at 6 months.
Random-effects meta-analysis of longer-term outcome of collaborative care for depression.
Cochrane Review 2012

• 79 RCTs
• >24,000 patients

Author’s Conclusions:
• 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 adults with depression and anxiety

Collaborative Care Backing

• The Community Preventive Services Task Force: recommends collaborative care for management of depressive disorders, based on strong evidence of effectiveness in improving depression symptoms, adherence to treatment, response to treatment, and remission and recovery from depression.

• APA: In the Primary Care setting, the APA recognizes a model of integrated care known as the Collaborative Care Model as the most effective approach with demonstrated positive outcomes and cost containment across different mental health diagnoses and treatment locations.

Collaborative Care for Anxiety (CALM study)

• RCT based on IMPACT but for anxiety
• N=1040 with 1 of 4 anxiety disorders (GAD, SAD, PTSD, panic d/o) from 4 different clinical sites
• Patients in intervention could choose pharmacotherapy, CBT or both
• Evaluated at 6, 12, and 18 months

CALM Outcomes

Anxiety Response

<table>
<thead>
<tr>
<th>Time</th>
<th>Intervention</th>
<th>UC</th>
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<tbody>
<tr>
<td>6M</td>
<td>57</td>
<td>37</td>
</tr>
<tr>
<td>12M</td>
<td>64</td>
<td>45</td>
</tr>
<tr>
<td>18M</td>
<td>64</td>
<td>51</td>
</tr>
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</table>

Anxiety Remission

<table>
<thead>
<tr>
<th>Time</th>
<th>Intervention</th>
<th>UC</th>
</tr>
</thead>
<tbody>
<tr>
<td>6M</td>
<td>43</td>
<td>27</td>
</tr>
<tr>
<td>12M</td>
<td>51</td>
<td>33</td>
</tr>
<tr>
<td>18M</td>
<td>51</td>
<td>36</td>
</tr>
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Adapted from JAMA 2010
Does CC Work for Patients with More Chronic Medical Conditions?

• Meta-analysis of 10,962 patients

• No difference in outcomes between patients with or without chronic physical conditions

• Number of chronic physical conditions did not affect treatment outcomes

• Type of physical condition did not affect treatment outcome (DM, CAD, HTN, resp, cancer)

CC for Depression and Chronic Illnesses

- 14 sites in Washington State
- N=214 patients with DM, CAD or both and comorbid depression
- Intervention: nurse-led in collaboration with PCP
- Outcomes of HgB A1C, LDL, SBP, and SCL-20

- Results:
  - Patients in intervention group had better medical and depression outcomes

States with Organizations or Individuals Implementing IMPACT
Duke Primary Care Depression Initiative (DPC-DI)

• Began with a DIHI grant proposed by Marvin Swartz, MD and Sarah Rivelli, MD and led by Natasha Cunningham, MD
• Pilot clinics: Sutton Station Internal Medicine and Galloway Ridge
• Patients screened with PHQ-9
• Scores >9 referred for depression care management
Collaborative Care Outcomes

- Response = 50% reduction in PHQ
- Remission = PHQ < 5

<table>
<thead>
<tr>
<th></th>
<th>DIHI</th>
<th>IMPACT *</th>
<th>Usual Care</th>
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<tbody>
<tr>
<td>N</td>
<td>60</td>
<td>906</td>
<td>895</td>
</tr>
<tr>
<td>Response</td>
<td>55%</td>
<td>45%</td>
<td>19%</td>
</tr>
<tr>
<td>Remission</td>
<td>27%</td>
<td>25%</td>
<td>8.3%</td>
</tr>
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*Impact Data: After 12 months of CM and used exclusion criteria of alcohol, history bipolar, psychiatrist and severe cognitive impairment.
Duke Primary Care Network – 2017

<table>
<thead>
<tr>
<th>County</th>
<th>Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durham</td>
<td>DPC Pickett Road&lt;br&gt;DPC Croasdaile&lt;br&gt;DUC Croasdaile&lt;br&gt;DUC Fayetteville Road&lt;br&gt;Durham Medical Center&lt;br&gt;Sutton Station Internal Medicine&lt;br&gt;Triangle Family Practice</td>
</tr>
<tr>
<td>Granville</td>
<td>DPC Butner-Creedmoor&lt;br&gt;Oxford Family Physicians</td>
</tr>
<tr>
<td>Vance</td>
<td>DPC Henderson</td>
</tr>
<tr>
<td>Alamance</td>
<td>DPC Mebane&lt;br&gt;Kernodle Clinic West</td>
</tr>
<tr>
<td>Chatham</td>
<td>DPC of Galloway Ridge</td>
</tr>
<tr>
<td>Orange</td>
<td>DPC Hillsborough&lt;br&gt;DUC Hillsborough&lt;br&gt;DPC Meadowmont&lt;br&gt;DPC Timberlyne</td>
</tr>
<tr>
<td>Wake</td>
<td>DPC Apex&lt;br&gt;DPC Blue Ridge&lt;br&gt;DPC Brier Creek&lt;br&gt;DPC Creedmoor Road&lt;br&gt;DPC Midtown&lt;br&gt;DPC Knightdale&lt;br&gt;DPC Morrisville&lt;br&gt;DPC Waverly Place&lt;br&gt;DPC Wellesley&lt;br&gt;DPC Western Wake&lt;br&gt;DPC Wake Forest&lt;br&gt;DPC Wakelon Internal Medicine&lt;br&gt;DUC Brier Creek&lt;br&gt;DUC Knightdale&lt;br&gt;DUC Morrisville&lt;br&gt;North Hills Internal Medicine</td>
</tr>
</tbody>
</table>
DPC-DI Community Presence

- 7 counties
- 18 clinics
- Clinics total 400,000 annual visits per year
- 611 referrals in the past year with 307 active patients at present
- Majority rolled out in first ½ of 2017 with addition of 10 clinics and 2 care manager-psychiatry teams
## DPC-DI Outcomes

<table>
<thead>
<tr>
<th></th>
<th>Usual Care</th>
<th>IMPACT</th>
<th>DPC-DI*</th>
</tr>
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<tbody>
<tr>
<td>N</td>
<td>N=895</td>
<td>N=906</td>
<td>N=89</td>
</tr>
<tr>
<td>Response</td>
<td>19%</td>
<td>45%</td>
<td>58%</td>
</tr>
<tr>
<td>Remission</td>
<td>8.3%</td>
<td>25%</td>
<td>26%</td>
</tr>
</tbody>
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* 6 weeks
<table>
<thead>
<tr>
<th>DPC-DI</th>
<th>IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Population-based care</td>
<td>✓ Population-based care</td>
</tr>
<tr>
<td>✓ Evidence-based stepped care</td>
<td>✓ Evidence-based stepped care</td>
</tr>
<tr>
<td>✓ Registry</td>
<td>✓ Registry</td>
</tr>
<tr>
<td>✓ Telephone-based</td>
<td>✓ Meet patient in person</td>
</tr>
<tr>
<td>✓ Private hospital</td>
<td>✓ Public hospital</td>
</tr>
<tr>
<td>✓ Age&gt;17</td>
<td>✓ Age&gt;65</td>
</tr>
<tr>
<td>✓ Nurse DCS</td>
<td>✓ Strict exclusion criteria</td>
</tr>
<tr>
<td>✓ Nurses prep Rx for PCP</td>
<td>✓ Nurse or psychologist DCS</td>
</tr>
<tr>
<td>✓ Behavioral activation</td>
<td>✓ Problem solving psychotherapy</td>
</tr>
<tr>
<td>✓ PHQ-9</td>
<td>✓ SCL-20</td>
</tr>
</tbody>
</table>
Collaborative Care for Depression Improves Other Health Outcomes

• Diabetes
  • Katon 2010

• Cardiovascular Disease
  • Citation COPES and CODIACS, Davidson 2010, 2013; Katon 2010, Stewart 2014

• HIV
  • Coleman 2012

• Cancer
  • SMaRT Oncology 2008, ADAPt-C
New Directions

• Treatment of additional mental health disorders: anxiety, bipolar, pain, dementia vs care for mental health and physical health conditions simultaneously

• Pay for performance

• Implementation of billing codes

• Telemedicine
Summary

• Collaborative care is a program based on the chronic disease model that is effective in treating depression

• Models that have not been effective include co-located care, informing PCPs about MDD diagnosis, and providing PCPs with a MDD algorithm for treatment

• The 5 tenents of collaborative care are patient centered care, population based care, measurement based care, stepped care, and accountable care

• DPC-DI is a Duke collaborative care program that is unique in that we are based in a private hospital, provide telephone only contact, use behavioral activation, treat all adults, have all nurse care managers, and have few exclusion criteria
Collaborative Care Resources

• AIMS Center
  • https://aims.uw.edu/

• Institute for Clinical Systems Improvement (ICSI)

• Patient Centered Primary Care Collaborative
  • https://www.pcpcc.org/

• John A. Hartford Foundation
Thank You

• Terry Ervin
• Zia Ward
• Whitney Camarillo
• Carol Poole
• Marvin Swartz
• Natasha Cunningham
• Sarah Rivelli
• John Anderson
• Liz Long

• Pat Johnson
• Kristen Shirey
• Elena Perea
• Greg Brown
• All DPC primary care providers
• All primary care clinic managers, MAs, and nurses
• Andrea Long
• Duke PDC leadership