Integrated Primary Medical & Behavioral Health Care: A Solution?

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Presentation Goals

1. Behavioral Health* is a problem in primary care**

2. Does integrating primary medical and behavioral health care offer a solution?

3. Next steps for improving behavioral health through primary care.

*Behavioral health is a broad term referring to mental health, substance use, and health behaviors (sleep, diet, exercise, sexual behavior, risky behavior, adherence).

**Primary care site where youths receive most of their medical services
Behavioral Health Problems Common in Primary Care

Children & adolescents with behavioral health (mental health and substance use) problems:

- Often seen in primary-care settings\(^1\)-\(^2\)
- Tend to be higher users of healthcare services\(^1\)-\(^2\)
- Likely to have other medical comorbidities\(^3\)

### Effective Treatment for Behavioral Health Problems Critical for Reducing Premature Death: Leading Causes of Death by Age Group, United States 2013

<table>
<thead>
<tr>
<th>Rank</th>
<th>10-14 years</th>
<th>15-19 years</th>
<th>20-29 years</th>
<th>30-39 years</th>
<th>40-49 years</th>
<th>50-59 years</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Unintentional Injuries</td>
<td>Unintentional Injuries</td>
<td>Unintentional Injuries</td>
<td>Unintentional Injuries</td>
<td>Malignant Neoplasms</td>
<td>Malignant Neoplasms</td>
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<tr>
<td>2</td>
<td>Malignant Neoplasms</td>
<td><strong>Suicide</strong></td>
<td><strong>Suicide</strong></td>
<td><strong>Suicide</strong></td>
<td>Heart Disease</td>
<td>Heart Disease</td>
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<tr>
<td>3</td>
<td><strong>Suicide</strong></td>
<td>Homicide</td>
<td>Homicide</td>
<td>Malignant Neoplasms</td>
<td>Unintentional Injuries</td>
<td>Unintentional Injuries</td>
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<tr>
<td>4</td>
<td>Congenital Malformations</td>
<td>Malignant Neoplasms</td>
<td>Malignant Neoplasms</td>
<td>Heart Disease</td>
<td><strong>Suicide</strong></td>
<td>Liver Disease</td>
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<tr>
<td>5</td>
<td>Homicide</td>
<td>Heart Disease</td>
<td>Heart Disease</td>
<td><strong>Homicide</strong></td>
<td>Liver Disease</td>
<td>Chronic Lower Respiratory Ds</td>
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<tr>
<td>6</td>
<td>Heart Disease</td>
<td>Congenital Malformations</td>
<td>Diabetes Mellitus</td>
<td>Liver Disease</td>
<td>Diabetes Mellitus</td>
<td>Diabetes Mellitus</td>
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<tr>
<td>7</td>
<td>Chronic Lower Respiratory Ds</td>
<td>Influenza and Pneumonia</td>
<td>Congenital Malformations</td>
<td>Diabetes Mellitus</td>
<td>Cerebro-Vascular</td>
<td><strong>Suicide</strong></td>
</tr>
</tbody>
</table>

Source: CDC vital statistics. Courtesy Alex Crosby
Preventive Intervention Needed During Childhood & Adolescence: Self-inflicted injury by age and sex--United States, 2013

Source: CDC WISQARS NEISS. Courtesy Alex Crosby.
Behavioral Health Problems Associated with Health Risk Behaviors: Depression


Funded by NIMH grant MH078596.
Can Integrating Primary Medical Care and Behavioral Health Care Provide a Solution?
Systematic Meta-Analysis: What does our science tell us?

- Searched Cochrane, PubMed, PsychINFO, EMBASE, and clinical trials databases (e.g., nihreporter.gov) from January 1, 1960 – June 2014.
- RCTs published in English, peer-reviewed journals
- Compared integrated mental/behavioral health services in pediatric primary care vs. treatment as usual or alternative control conditions.
  - Integrated care defined broadly to refer to behavioral health care through primary care services. Includes a range of diverse models aimed at unifying behavioral health and primary care (Butler et al., 2008) such as: integrating behavioral health expertise into the primary care setting using consultation, web-based, telephone, and/or other resources; co-locating behavioral health care in primary care clinics; and team-based collaborative care models (Katon et al., Collins et al., 2010).
  - Comparator conditions approximated usual care, allowing for some enhancements
- Key search terms: primary care, collaborative care, co-located care, integrated care. Combined with the terms: child, adolescent/adolescence, youth, and pediatric.
- Samples with transitional-aged youths (up to age 21) were included when sample was primarily adolescents/youths.

Identified 31 studies: 13,129 participants

• 23 evaluated treatment for youths with identified problems (1 study had 2 treatments)
  – 19 mental health treatments
  – 4 substance use treatments

• 9 evaluated preventive services
  – 3 mental health prevention (2 depression, 1 parenting intervention for behavior problems)
  – 6 substance use prevention

Analyses

• Comprehensive Meta-Analysis 2.0 (CMA; Borenstein et al., 2008)
• Random effects model, due to heterogeneity of studies
• Used raw data whenever possible; otherwise used analyses provided
• Mental health outcomes:
  – Used primary outcomes identified in studies
  – Otherwise, used mean of targeted mental health outcomes and/or impairment
• Effect sizes of 0.30, 0.50, and 0.70 were interpreted as small, medium, and large respectively (Cohen, 1988)

Overall Significant Small Effect of Integrated Care


Overall $d = .32$ (CI: .21 - .44; $d$ range: -.18 – 2.76), $p<.001$; Substantial heterogeneity
Do Trial Outcomes Differ for Trials Evaluating Treatment vs. Preventive Interventions?


**Significant difference in effects for treatment vs. prevention trials**

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>N (tx-control comparisons)</th>
<th>Average Effect Size</th>
<th>95% CI</th>
<th>ES p-value</th>
<th>Q_w</th>
<th>Q_b</th>
<th>Q p-value</th>
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<tbody>
<tr>
<td>Trial Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>0.26</td>
<td>-0.09-0.60</td>
<td>.14</td>
<td>7.93</td>
<td>.005</td>
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<tr>
<td>• Treatment</td>
<td>25</td>
<td>0.42</td>
<td>0.29-0.55</td>
<td>&lt;.001</td>
<td>119.12</td>
<td>&lt;.001</td>
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<tr>
<td>• Prevention</td>
<td>10</td>
<td>0.07</td>
<td>-0.13-0.28</td>
<td>.49</td>
<td>7.53</td>
<td>.59</td>
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</table>
Small Significant Effect for Treatment Interventions


Overall $d = .44$ (CI: .29 - .60; $d$ range: .04 – 2.76); $p < .001$

<table>
<thead>
<tr>
<th>Study name</th>
<th>Std diff in means</th>
<th>Lower limit</th>
<th>Upper limit</th>
<th>Z-Value</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asarnow et al. (2005)</td>
<td>0.587</td>
<td>-0.255</td>
<td>0.919</td>
<td>3.461</td>
<td>0.001</td>
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<tr>
<td>Clarke et al. (2005)</td>
<td>0.246</td>
<td>-0.073</td>
<td>0.565</td>
<td>1.510</td>
<td>0.131</td>
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<tr>
<td>Kolko et al. (2012)</td>
<td>1.649</td>
<td>0.792</td>
<td>2.505</td>
<td>3.774</td>
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<td>Kolko et al. (2014)</td>
<td>0.267</td>
<td>0.023</td>
<td>0.512</td>
<td>2.140</td>
<td>0.032</td>
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<td>Richardson et al. (2014)</td>
<td>1.020</td>
<td>0.605</td>
<td>1.434</td>
<td>4.819</td>
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<td>Borowsky et al. (2004)</td>
<td>0.144</td>
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<td>0.407</td>
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<td>Epstein et al. (2007)</td>
<td>0.038</td>
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<td>0.368</td>
<td>0.224</td>
<td>0.823</td>
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<tr>
<td>Kjobli &amp; Ogden (2012)</td>
<td>0.304</td>
<td>0.035</td>
<td>0.572</td>
<td>2.218</td>
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<td>Kolko et al. (2010)</td>
<td>0.149</td>
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<td>0.951</td>
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<td>Lavigne et al. (2008) psychologist</td>
<td>0.588</td>
<td>0.105</td>
<td>1.070</td>
<td>2.388</td>
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<td>Lavigne et al. (2008) nurse</td>
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<td>0.001</td>
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<td>Lavigne et al. (2011)</td>
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<tr>
<td>Mufson et al. (2004)</td>
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<td>0.040</td>
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<tr>
<td>Patterson et al. (2002)</td>
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<td>0.794</td>
<td>0.427</td>
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<td>0.073</td>
<td>0.787</td>
<td>2.360</td>
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<td>Reid et al. (2013)</td>
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<td>-0.064</td>
<td>0.551</td>
<td>1.554</td>
<td>0.120</td>
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<tr>
<td>Spilkers et al. (2013)</td>
<td>2.450</td>
<td>1.922</td>
<td>2.978</td>
<td>9.096</td>
<td>0.000</td>
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<tr>
<td>Turner &amp; Sanders (2006)</td>
<td>0.400</td>
<td>-0.326</td>
<td>1.126</td>
<td>1.079</td>
<td>0.280</td>
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<tr>
<td>Warner et al. (2011)</td>
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<td>1.114</td>
<td>4.414</td>
<td>3.283</td>
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<tr>
<td>Wissow et al. (2007)</td>
<td>0.110</td>
<td>-0.085</td>
<td>0.305</td>
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<td>0.270</td>
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<tr>
<td>Audrain-McGovern et al. (2011)</td>
<td>0.066</td>
<td>-0.342</td>
<td>0.475</td>
<td>0.319</td>
<td>0.750</td>
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<td>D'Amico et al. (2007)</td>
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<td>-0.728</td>
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<td>Pbert et al. (2008) cessation</td>
<td>0.256</td>
<td>0.030</td>
<td>0.481</td>
<td>2.224</td>
<td>0.026</td>
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<td>Walton et al. (2013) CBI</td>
<td>0.097</td>
<td>-0.174</td>
<td>0.368</td>
<td>0.704</td>
<td>0.482</td>
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<tr>
<td>Walton et al. (2013) TBI</td>
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<td>-0.102</td>
<td>0.418</td>
<td>1.190</td>
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<td>Walton et al. (2013)</td>
<td>0.441</td>
<td>0.285</td>
<td>0.597</td>
<td>5.545</td>
<td>0.000</td>
</tr>
</tbody>
</table>
Weak Effect for Preventive Interventions

Overall $d = .05$ (CI: .13 – 1.22; $d$ range: -.18 – .422) ; $p = .22$

Pbert et al. (2008) evaluated practice-based intervention using the 5A model (Ask, Advise, Assess, Assist, Arrange) delivered by PCPs followed by one visit and 4 telephone calls by peer counselors (18-21 yrs), N=2,709
Do Trial Outcomes Differ for Trials Evaluating Treatments for Mental Health vs. Substance Use Problems?


**Medium Effect for Mental Health Treatment**

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>N (tx-control comparisons)</th>
<th>Average Effect Size</th>
<th>95% CI</th>
<th>ES p-value</th>
<th>Q_w</th>
<th>Q_b</th>
<th>Q p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Target</td>
<td>25</td>
<td>0.37</td>
<td>0.05-0.70</td>
<td>.03</td>
<td>2.94</td>
<td></td>
<td>.09</td>
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<tr>
<td>• Mental Health</td>
<td>20</td>
<td>0.51</td>
<td>0.34-0.69</td>
<td>&lt;.001</td>
<td>111.57</td>
<td></td>
<td>&lt;.001</td>
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<tr>
<td>• Substance Use</td>
<td>5</td>
<td>0.17</td>
<td>-0.18-0.52</td>
<td>.35</td>
<td>1.29</td>
<td></td>
<td>.86</td>
</tr>
</tbody>
</table>
Medium Effect for Mental Health Treatment


Overall $d = .52$; (CI: .33 - .72; $d$ range: .11 – 2.76); $p < .001$

No significant difference between targeting emotional vs. behavioral problems
Weaker Effect for Substance Use Treatment

Overall $d = .17$ (CI: .04 – .31); $d$ range: .07 - .44; $p = .01$

Reference for Pbert et al. (2008):
Pbert et al. (2008) evaluated practice-based intervention using the 5A model (Ask, Advise, Assess, Assist, Arrange) delivered by PCPs followed by one visit and 4 telephone calls by peer counselors (18-21 yrs), N=2,709

### Do Trial Outcomes Differ for Trials Evaluating Collaborative Care Vs. Other Intervention Models?


#### Improved outcomes with collaborative care and other intervention models

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>N (tx-control comparisons)</th>
<th>Average Effect Size</th>
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<th>Q_w</th>
<th>Q_b</th>
<th>Q p-value</th>
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</thead>
<tbody>
<tr>
<td>Integrated Care Model</td>
<td>25</td>
<td>0.46</td>
<td>0.26-0.67</td>
<td>&lt;.001</td>
<td>1.37</td>
<td>.24</td>
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<tr>
<td>• Collaborative Care</td>
<td>5</td>
<td>0.63</td>
<td>0.28-0.98</td>
<td>&lt;.001</td>
<td>19.02</td>
<td>.001</td>
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<tr>
<td>• Other Interventions</td>
<td>20</td>
<td>0.40</td>
<td>0.22-0.57</td>
<td>&lt;.001</td>
<td>95.34</td>
<td>&lt;.001</td>
<td></td>
</tr>
</tbody>
</table>
Medium-to-Large Effect for Collaborative Care Trials

Overall $d = .63$ (CI: .27 – .997; $d$ range: .25 – 1.02); $p = .001$

Medium Effect for Other Integrated Care Models

Overall $d = .49$ (CI: $.26 – .72; d range: $.04 – 2.76); $p < .001$
Integrated Primary Medical & Behavioral Health Care: A Solution to address at least part of need

Small to Medium Effect Size

Probability 66% that a randomly selected youth would have a better outcome after receiving integrated care than a randomly selected youth after UC.

The Road Ahead: Next Steps

• Substantial variation in effects across studies
• What are the most promising models for integration?
Figure 1. Characteristics of integration linked to process of care

Characteristics of Integrated Models

- Systematic screening
- Integrating Providers
  - Co-location
  - Systematic communication method
  - Shared medical records
  - Shared decisionmaking
- Integrated care/proactive followup
  - New service offered
  - Standardized followup
  - Formal adherence and clinical monitoring and feedback
  - Education

Process of Care

- Identify mental health problem
- Primary Care Providers or Primary Care/Mental Health Provider Teams
  - Awareness of mental health problems
  - Comfort treating mentally ill patients and/or coordinating services with MH providers for complex patients
  - Adherence to evidence based guidelines

Patients

- Access to care
- Reduced stigma
- Engagement in care
- Adherence

From: Butler M, Kane RL, McAlpine D, Kathol, RG, Fu SS, Hagedorn H, Wilt TJ. Integration of Mental Health/Substance Abuse and Primary Care No. 173 (Prepared by the Minnesota Evidence-based Practice Center under Contract No. 290-02-0009.) AHRQ Publication No. 09-E003. Rockville, MD. p. 5
YPIC: Collaborative Care for Depression

- Screener indicates high levels of depressive symptoms

  → Referred to Care Manager (CM)

  → PCP contacted and briefed

  → Patient contacted, visit with CM and PCP scheduled

  → Initial Patient Visit with CM (45 min.)
    - Structured Evaluation
    - Basic Patient and Family Education

  → Primary Care Provider (15 min.)
    - Develop PCP management plan
    - Consider specialty mental health consultation

Follow-up visits/phone calls by CM and primary care clinicians

Education & finalization of treatment plan with CM, PCP, or both

Medication or medication plus psychotherapy is prescribed

CBT is initiated and primary care follow-up arranged

Psychotherapy is prescribed

CM re-contacts in 4 weeks for follow-up

Patients not started on treatment

Other Models: Co-Located EBT

- Medical and behavioral health in the same place
- Referral process
- Enhanced informal communication

- Improves skills for team based care
- Improved access and quality of behavioral health care
- Improved rates of care
Other Models: Examples

- Behavioral Health Consultation
  e.g. MCPAP

- Coordinated Care
  Screening, Brief PCP Intervention, Referral

- Technology Enhanced Care
  e.g. CATCH-IT

- Integrated Care
  Unified Treatment Plan
  Team-Based Care
  Information Systems for Patient Tracking
  Accountable for Population Health
Next Steps: Problems & Possible Solutions

<table>
<thead>
<tr>
<th>Problems</th>
<th>Possible Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary care providers feel ill-prepared</td>
<td>Training Consultation Resource Material</td>
</tr>
<tr>
<td>Inadequate resources in primary care</td>
<td>Referral Network Information System to Support Linkage Care Manager</td>
</tr>
<tr>
<td>Quality of care problems/Inadequate follow-up and treatment exposure</td>
<td>Care Manager Co-location of behavioral health providers Team-Based Medical &amp; Behavioral Health Care</td>
</tr>
<tr>
<td>Disease considerations/acute and longer term considerations/chronic disease model for many behavioral health problems</td>
<td>Screening &amp; Monitoring System Outreach for Follow-Up Stepped decision-making to modify and/or intensify care when Treatment Response is Inadequate/Patient Worsening/Not Improving</td>
</tr>
</tbody>
</table>
Next Steps: Dissemination, Rigorous Scientific Evaluation & Continuous Quality Improvement

• How do we get effective integrated care models into routine practice in real world settings?
• How do we ensure rigorous scientific evaluation to inform practice and science?
Cost Considerations: Integrated Medical-Behavioral Health Care Projects

• SCCAP/SPP/SCFPP/APA: Optimizing Success of Health Care Transformation Through Science

• SCCAP/AACAP/AAP/SPP/SCFPP/SDBP/Milliman
Estimate health care savings opportunities with integrated medical-behavioral health care
Summary

1. Behavioral Health is a problem that can be addressed through primary care

2. The evidence indicates that integrated primary medical and behavioral health care can offer part of the solution

3. Next steps:
   - Clarify models and service components associated with greatest benefits
   - Implement effective models in practice
   - Rigorous evaluation and a continuous quality improvement process to improve care in practice settings