DIAMOND: A successful first step for integrating behavioral health into primary care

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Disclosures

• No financial disclosures.
Majority behavioral health patents – no care or care in general medicine

**National Comorbidity Survey Replication**
Provision of Behavioral Health Care: Setting of Service

- **No Treatment**: 59%
- **41% Receiving Care**: 41%
- **General Medical**: 56%
- **MH Professional**: 44%

Wang P, et al., Twelve-Month Use of Mental Health Services in the United States, *Arch Gen Psychiatry*, 62, June 2005
NCQA HEDIS Measures
Commercial Plans

“How’s everything?”
Is there a better model for depression?

- 37 trials of collaborative care for depression in primary care (US and Europe)
  - Meta-analysis by Gilbody et al, *Archives of Internal Medicine*; 2006

- Consistently more effective than usual care
  - Unutzer et al, Report to President’s Commission on Mental Health; *Psychiatric Services*; 2006.
Findings Robust Across Diverse Health Care Organizations

(>= 50 % reduction in depression from baseline at 12 months)
## Lower long-term (4 year) healthcare costs

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>Overall cost in $ (mean)</th>
<th>Intervention group cost in $</th>
<th>Usual care group cost in $</th>
<th>Difference in $</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMPACT Intervention cost</td>
<td>NA</td>
<td>522</td>
<td>0</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>7284</td>
<td>6,942</td>
<td>7,636</td>
<td>-694</td>
</tr>
<tr>
<td>Other outpatient costs</td>
<td>14306</td>
<td>14,160</td>
<td>14,456</td>
<td>-296</td>
</tr>
<tr>
<td>Total outpatient cost</td>
<td>22516</td>
<td>22,182</td>
<td>22,859</td>
<td>-677</td>
</tr>
<tr>
<td>Inpatient medical costs</td>
<td>8452</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 over 4 years</td>
<td>31082</td>
<td>29,422</td>
<td>32,785</td>
<td>-3363</td>
</tr>
</tbody>
</table>

Unutzer et al, Am J Managed Care 2008
• Depression Initiative Across Minnesota, Offering a New Direction

  • Modeled after collaborative care work (Katon and Unutzer).
  • Created by the Institute for Clinical Systems Improvement (ICSI)
Transforming Health Care Through Collaboration

Bring together providers, payers, patients, and purchasers to improve care based on evidence and innovation.

• 60 member organizations
• 9,000 physicians
• 7 sponsoring health plans
Steps towards DIAMOND

• Obtain agreement from 6 major private insurance companies in the state to develop a new payment for collaborative care

• Survey interested practices for readiness-for-change

• Spread the model to 83 practices in five waves of collaborative learning (six months per wave)

• Encourage buy-in by state to require outcomes from all Primary practices using PHQ-9 data
The DIAMOND Care Model

Four New Processes:

1. Systematic assessment & monitoring (PHQ-9)
2. Reliable tracking system via registry
3. Stepped care approach to intensify or modify treatment
4. Relapse prevention
1. Assessment and Monitoring: PHQ-9

- Systematic tracking of symptoms
- Quick and easy to administer
- Assists in treatment modification
- Simply DSM criteria
- Validated in several languages, available in many others

### PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over the last 2 weeks, how often have you been bothered by any of the following problems? (Use &quot;✓&quot; to indicate your answer)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Little interest or pleasure in doing things</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>2. Feeling down, depressed, or hopeless</td>
<td></td>
<td>✓</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Trouble falling or staying asleep, or sleeping too much</td>
<td></td>
<td>1</td>
<td>✓</td>
<td>3</td>
</tr>
<tr>
<td>4. Feeling tired or having little energy</td>
<td></td>
<td>1</td>
<td>2</td>
<td>✓</td>
</tr>
<tr>
<td>5. Poor appetite or overeating</td>
<td></td>
<td>✓</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down</td>
<td></td>
<td>1</td>
<td>✓</td>
<td>3</td>
</tr>
<tr>
<td>7. Trouble concentrating on things, such as reading the newspaper or watching television</td>
<td></td>
<td>1</td>
<td>✓</td>
<td>3</td>
</tr>
<tr>
<td>8. Moving or speaking so slowly that other people could have noticed. Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual</td>
<td></td>
<td>1</td>
<td>✓</td>
<td>3</td>
</tr>
<tr>
<td>9. Thoughts that you would be better off dead, or of hurting yourself in some way</td>
<td>✓</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>add columns: 2 10 3 TOTAL: 15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Healthcare professional: For interpretation of TOTAL please refer to accompanying scoring card.)

10. If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

- Not difficult at all
- Somewhat difficult ✓
- Very difficult
- Extremely difficult

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2. Tracking System

• Registry tool for the care manager
  • Data collection for a group
  • Track progress
  • Follow-up contact reminders
  • Attending to those in need
  • Web, paper, excel, other
3. Stepped Care Approach

- Try something new when patients are not improving (tracking by care manager is key)
- Find MH resources for those beyond PC capacity.
- ICSI Depression guideline including STAR*D studies
4. Relapse Prevention

- After patient is in remission
- What is the maintenance plan?
- Patient & care manager create together
  - Risk factors
  - Continuing treatment
  - Warning signs
Two New Roles

• A Care Manager or Care Coordinator
  • Medical assistants, nurses, behavioral health providers

• Consulting Psychiatrist
  • Hard for many primary care clinics to find
Care Manager Role

• Registry use and patient follow up:
  • Education & coordination
  • Supporting self management goals
  • Liaison for stepped care treatment
  • Relapse prevention

• Medical assistants, nurses, behavioral health providers
Consulting Psychiatrist

- Weekly caseload review with care manager
- Focus on new patients and those not improving
- Build relationship with primary care team
- Treatment recommendations based on evidence-based guidelines
- Resource for questions, consults & training
Frequently asked questions

• Does the psychiatrist see each patient?

• How can you tell what is going on with a given patient?
  • Review of the past record
  • Screening for comorbidities
    • AUDIT – alcohol screening
    • MDQ – bipolar screening
    • GAD-7 – anxiety screening
Frequently asked questions

• Are any patients excluded?
  • Admission criteria to DIAMOND
    • Age 18 or more
    • Diagnosis by primary care provider of Major depression and/or dysthymia
    • PHQ-9 score of 10 or more
      • If found to be bipolar – excluded
  
• How long can the patient stay in DIAMOND?
  • Until remission (PHQ-9 <5) or one year
Challenges to Implementation

- Difficulty finding a dedicated care coordinator
  - Practices where RNs asked to do several tasks did not do as well
- Warm handoffs increase patient confidence
  - Patients rely on PCP advise
- Varied insurance plans and coverage
- Psychiatry issues
- Lack of resources for referral
- Cost increases in fee-for-service world
The Numbers (as of March/2012)

Patients enrolled: >8000

Clinics participating: 83

Care managers (FTEs) 25

Physicians 490

Typical case load of an FTE care manager in DIAMOND = around 100 patients
Measurement from ICSI

Four types of measurement:

- Care delivery process (patient enrollment, PHQ-9s administered)
- Care delivery outcome (response and remission)
- Patient satisfaction (NIH study)
- Cost effectiveness (NIH study)
  - Groups were asked to submit their costs for DIAMOND – for both start up and maintenance
DIAMOND
Monthly Cumulative Enrollment
March 08 - Jan 12

Total Activation=8599 patients
DIAMOND Program
Primary Care Provider PHQ-9 Usage
Institute for Clinical Systems Improvement
Bloomington, Minnesota, United States

Overall=64%
Patients with PHQ-9>9 and Activated into DIAMOND-Intent to Treat (N=7140)

- Response Rate: 40.3%
- Remission Rate: 30.0%
- MNCM Remission Rate: 5%*

Patients Activated into DIAMOND who have PHQ-9 follow up at 6 months-Remeasured (N=4367)

- Response Rate: 65.9%
- Remission Rate: 49.1%

* MNCM rate includes all depressed patients with PHQ-9>9 who may or may not be part of DIAMOND.
Remission rates at 6 months for depression

<table>
<thead>
<tr>
<th>Clinic</th>
<th>Location</th>
<th>Zip Code</th>
<th>Remission Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mayo Clinic - Northwest</td>
<td>Rochester</td>
<td>55901</td>
<td>31%</td>
</tr>
<tr>
<td>Mayo Clinic - Northeast</td>
<td>Rochester</td>
<td>55906</td>
<td>24%</td>
</tr>
<tr>
<td>CentraCare Health System Long Prairie</td>
<td>Long Prairie</td>
<td>56347</td>
<td>15%</td>
</tr>
<tr>
<td>Family Health Services Minnesota -</td>
<td>White Bear</td>
<td>55110</td>
<td>15%</td>
</tr>
<tr>
<td>White Bear Office</td>
<td>Lake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HealthPartners - Roseville (NSFP)</td>
<td>Roseville</td>
<td>55113</td>
<td>13%</td>
</tr>
<tr>
<td>Family Health Services Minnesota -</td>
<td>Shoreview</td>
<td>55126</td>
<td>12%</td>
</tr>
<tr>
<td>Shoreview</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allina Health System - Allina Mental</td>
<td>St. Paul</td>
<td>55102</td>
<td>12%</td>
</tr>
<tr>
<td>Health St. Paul</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allina Health System - Allina Mental</td>
<td>Fridley</td>
<td>55432</td>
<td>12%</td>
</tr>
<tr>
<td>Health Northtown Clinic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mayo Clinic - Baldwin Building, Family</td>
<td>Rochester</td>
<td>55905</td>
<td>12%</td>
</tr>
<tr>
<td>Medicine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mayo Clinic - Kasson</td>
<td>Kasson</td>
<td>55904</td>
<td>12%</td>
</tr>
</tbody>
</table>
Six month remission rate (intent to treat) at two primary care clinics before and after introduction of care coordination

![Bar chart showing remission rates before and after care coordination](chart.png)

*J Ambulatory Care Manage*  
Vol. 34, No. 2, pp. 163–173
Patient and provider level outcomes

• High patient satisfaction
  • Many testimonials
  • Qualitative research showing positive results

• Access
  • From 2-3 months to 1 week for specialty input

• Providers
  • PCP providers high satisfaction
Sustaining a change: Need to have a WIIFM for every stakeholder

- **Medical groups** - sustaining program is cost neutral for covered patients (still not all covered)
- **Health plans** - total health care cost savings over time
  - Pending NIH overall project outcome
  - At Mayo lowered PMPM seen in covered patients
- **Employers** – Remission vs non remission for depression (our own data in press)
  - Improved absenteeism (42%)
  - Presenteeism (31%)
  - Functioning at home (59%)
- **Patients** - better care, back to work, improved functioning
Medical Group Cost to sustain DIAMOND

- HPRF DIAMOND study group conducted a medical group cost analysis:

<table>
<thead>
<tr>
<th>DIAMOND components</th>
<th>Hours per pt</th>
<th>Cost per pt</th>
<th>Weighted mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care Manager</td>
<td>1.0 - 2.5</td>
<td>$40 - 110</td>
<td>$78</td>
</tr>
<tr>
<td>Consulting psychiatrist</td>
<td>0.1 - 0.2</td>
<td>$7 - 22</td>
<td>$10</td>
</tr>
<tr>
<td>Billing and coding</td>
<td>0.1 - 0.2</td>
<td>$2 - 4</td>
<td>$3</td>
</tr>
<tr>
<td>Registry and IT systems</td>
<td>0.1 - 0.5</td>
<td>$1 - 15</td>
<td>$7</td>
</tr>
<tr>
<td>Supervision of DIAMOND program</td>
<td>0.1 - 0.5</td>
<td>$5 - 22</td>
<td>$11</td>
</tr>
<tr>
<td>Other significant costs</td>
<td>None reported</td>
<td>None reported</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1.5 - 3.0</td>
<td>$75 - 140</td>
<td>$109</td>
</tr>
</tbody>
</table>

DIAMOND patients in Aug (range) 18 - 140
Nine Factors for Success Identified

- Top leadership support
- PCP champion
- PCP buy-in
- Care manager hire was a good fit
- Care manager defined role/time/space
- Care manager onsite and accessible
- Warm handoffs
- Engaged psychiatrist
- Group has financial process worked through
Collaborative Care: Making It Work

Why was DIAMOND sustained at Mayo?

• Statewide initiative means benchmarks
  • Helpful for reports to administration
• Practice metrics no longer entirely fee-for-service
• Reimbursement for care coordination
  • Inadequate, but better than alternative
• Outcomes clearly better than practice as usual
• Simply placing behavioral health providers in primary care had already been tried
What next – tension between models?

- **Disease specific care coordination models**
  - Structured plan
  - Based on evidence
  - Benchmarks available
  - Requires specialty involvement to link with primary care
  - Reimbursement sometimes

- **Healthcare Home models**
  - Based on the population
  - No benchmarks
  - No specialty involvement
  - Targets highest cost patients
  - Reimbursement available
Mayo Care Coordinators
2012

Adult Care Coordinators

IBH Care Coordinators

DIAMOND Depression
Post DIAMOND
Adding evidence-based models

- DIAMOND – adult depression
- EMERALD – adolescent depression
- CALM – adult anxiety
- SBIRT – adult addiction
Rochester Mayo Care Coordinators

- Healthcare Home Adult Care Coordinators
- IBH Care Coordinators
- SBIRT Alcohol
- DIAMOND Depression
- CALM Anxiety

30% MDD
Meanwhile….Mayo Clinic Health system
Implementing COMPASS, a modification of TEAMcare
COMPASS: CMS innovation grant for 3 years starting 2012

1. To implement a collaborative care management model for patients with depression and diabetes or cardiovascular disease in the primary care clinics of 15 care systems in 7 states

2. To document that this model is well-implemented and improves care quality, patient experience and health, provider satisfaction, and total health care costs for Medicare and Medicaid patients with the targeted conditions

3. To develop role descriptions and training for the two new types of workers required for this model: care managers and local expert consultants

4. To identify the implementation and operational costs, model features, and financial models that will be needed by care systems to sustain this care model and spread it further
Characteristics of Rapidly Disseminated Innovations

- Robust scientific evidence
- Applicable to many patients or without innovation patients will suffer severe adverse events
- Cost neutral or savings
- Raises patient satisfaction
- Not complicated to implement
Implementation Pearls

• Buy-in from key leaders
• Buy-in from “wreckers”
• Involve clinicians from beginning
• Sensitive to time pressures
• Feedback to clinicals in trenches
• Bring food
What we have learned (often the hard way) not to do

- Guidelines alone do not lead to better outcomes
- Patient and provider education alone do not improve outcomes
- Do not increase screening until efficient process of care is in place
- Proactive care coordination is essential
- Need to directly deal with concern about suicidal patients
- Specialty vs primary care culture needs to be addressed with flexibility on both sides
Creating Change in the Health Care Community

1. Urgency
   • Usual care data + Lack of existing success

2. Multiple stakeholders
   • ICSI as neutral convener + “Fair Process”

3. Evidence & experts
   • More than 37 RCT’s led to confidence in model
   • Consultation by J. Unutzer

4. Readiness
   • Leadership ability to commit resources
   • PHQ-9 and registry experience

5. Align measurement and incentives
   • New state reporting requirements
   • New reimbursement and P4P
Summary

• DIAMOND is an example of a successful spread of an evidence-based model into multiple practices in Minnesota

• Outcomes are important but alone are not enough to change care

• Algorithms alone do not change what happens to patients either

• Sustainable models are built on a combination of evidence, relationships, and the use of quality improvement tools to change systems.
Mayo Diamond Team Members

- Dr. David Katzelnick, Psychiatry - director of IBH
- Dr. Mark Williams, Psychiatry
- Dr. Kristin Somers, Psychiatry
- Dr. Kurt Angstman, Family Medicine
- Dr. Steven Bruce, Family Medicine
- Dr. Jay Mitchell, Family Medicine
- Dr. John Wilkinson, Family Medicine
- Dr. Ramona DeJesus, Primary Care Internal Medicine
- Dr. Marcie Billings, Community Pediatrics
- Mr. Rob Bender, Operations Manager
- Stephanie Witwer, Nursing Administration
- Angela Kaderlik, RN Coordinator and 11 care managers
Questions??

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