ICSI Institute for Clinical Systems Improvement
Transforming health care, together

The DIAMOND Program: Treatment for Patients with Depression in Primary Care

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Abstract

Depression has presented a difficult treatment challenge to the health care system. A number of collaborative care models have been tested to determine if patients with depression can be treated successfully in primary care clinics. The Institute for Clinical Systems Improvement (ICSI) launched its DIAMOND (Depression Improvement Across Minnesota, Offering a New Direction) model in 2008 to change how care for patients with depression was delivered and paid for in primary care. More than 12,000 patients were activated into the program through April 2013. Recent studies show differing results of this pioneering work. A National Institute of Mental Health-funded study found no difference in outcomes between DIAMOND and non-DIAMOND patients. Mayo Clinic studies showed DIAMOND patients had better outcomes. ICSI is using lessons learned from these studies and other DIAMOND work to further integrate behavioral health and primary care.

Background

At any given time, 9% of the U.S. population has a depressive disorder. Plus depression produces a greater decrease in quality of health compared to several other chronic diseases.[1,2]

Historically, almost 75 percent of patients with depression see a primary care provider, but they detect only 35 to 50 percent of adult patients who have major depression.[3] About 50 percent of these patients get treated, and only 20 to 40 percent of those receiving treatment show substantial improvement in the year following diagnosis.[4]

The Institute for Clinical Systems Improvement, which represents 50 medical groups in Minnesota and surrounding regions, identified barriers for providing high-quality care to patients with depression. It brought diverse stakeholders representing medical groups, health plans, purchasers and patients together to develop a collaborative care model with the goal of improving how depression is managed and paid for in primary care clinics.

Model Development

Through its initial review, ICSI found more than 37 trials that showed a collaborative care team approach for managing depression in primary care improves patient health.[5] ICSI formed a steering committee to develop the DIAMOND model. They based it on a model developed by Wayne Katon, MD,[6] and tested as IMPACT (Improving Mood: Providing Access to Collaborative Treatment) in a randomized controlled trial by Jurgen Unützer, MD.[4]

DIAMOND Components

The DIAMOND model's six key components are:

1. Use of a validated screening tool, the PHQ-9 (Patient Health Questionnaire), for screening and ongoing management of depression symptoms.
2. Use of a registry to track the patient's PHQ-9 scores and progress over time.
3. Use of evidence-based guidelines and a stepped-care approach for treatment modification and intensification.
4. Relapse prevention planning to prevent depression recurrence.
5. A care manager who supports and coordinates care and troubleshoots barriers with patients.
6. Psychiatric consultation and case load review.

The care manager schedules regular face-to-face or phone contacts with each patient, during which he or she educates patients about depression and supports and motivates them toward self-management.

Care managers regularly re-administer the PHQ-9, manage the patient registry, monitor patients' progress, serve as the treatment liaison between the primary care physician and consulting psychiatrist, and work with patients who have improved to prevent relapse and help them know what to do if symptoms return.

The care manager's accessibility and flexibility allows for more frequent contacts with the patient and greater continuity of care than is possible with brief or infrequent physician visits. Care managers typically have backgrounds in nursing, social work or psychology, or as certified medical assistants.

The consulting psychiatrist reviews the care manager's case load weekly and advises the care manager and primary care physician on recommended changes in treatment for patients who are not improving. These changes can include medication adjustments or referrals to other mental health resources. The primary care physician makes final decisions about each patient's care plan.

Payment Redesign

The DIAMOND Steering Committee designed a payment model to support the initiative. A single billing code for DIAMOND services was established for use in certified DIAMOND clinics. The code covers care manager services, plus weekly consultation and case review by the psychiatrist. Patients who are 18 or older are eligible to participate in the program for up to a year if they have a diagnosis of major depression or dysthymia and a PHQ-9 score of 10 or higher. The health plans negotiate the monthly reimbursement amount with each clinic in order to avoid any violation of anti-trust law.

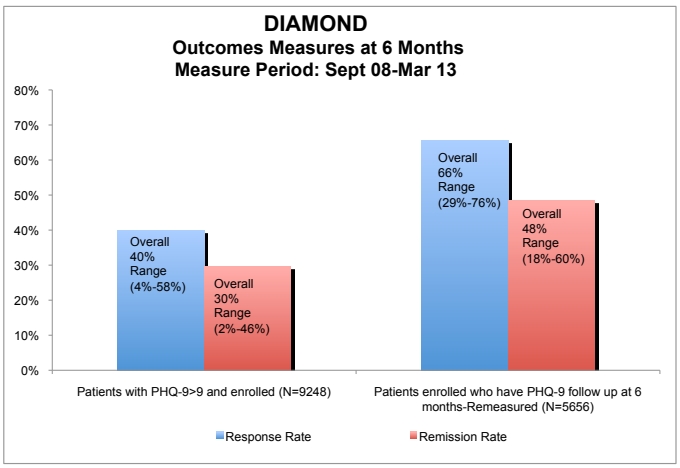
Clinic Implementation Data

Almost 100 primary care clinics activated more than 12,000 patients into DIAMOND as of April 2013. This was not an easy model to implement as it involves change on multiple levels in a given clinic, and several clinics dropped out over the years for various reasons. The outcomes for the approximately 12,000 patients who were enrolled in the DIAMOND model from March 2008 through March 2013 are shown in Graph 1.

The two sets of bar graphs include response and remission rates based on *intent to treat* on the left side and *completers* on the right. Definitions to help understand the graph are:

- **Response** – a 50 percent or more PHQ-9 score reduction from baseline at six months.
- **Remission** – a PHQ-9 score in the non-depressed range (< 5) at six months.
- **Intent to treat** is a common approach to population data where the denominator includes all eligible patients such that *any patient who was lost to care was considered to have never improved* – this conservative approach is used in Minnesota Health Scores as well, such that percentages may underestimate true response and remission since patients who are well do not always provide results.
- **Completers** only include those patients that clinics could reach to gather outcomes data at six months and, as such, this model tends to exaggerate response and remission.

In each bar in the graph the range of DIAMOND patient outcomes by clinics is shown. A big part of the story of the DIAMOND initiative is that there was a lot of variation in response between clinics all implementing the same model of care. It is important to note that the data in the bar graph is not compared with any control population, as is often the case in research environments.



Graph 1. Patients include all with major depression or dysthymia diagnoses with PHQ-9 >9 who enrolled into DIAMOND and did not decrease or transfer care to another health care system. Re-measured denominator includes all patients enrolled into DIAMOND who had PHQ-9 follow-up at 6 months, +/-30 days.

Evaluation Studies

Through a National Institute of Mental Health (NIMH) grant, the HealthPartners Institute for Education and Research (HPIER) evaluated the DIAMOND model. The Mayo Clinic also evaluated the effectiveness of the DIAMOND model in its own clinics (without external comparisons). In these instances, the results of DIAMOND patients were compared with a control population in usual practice. The studies showed different results:

NIMH Study: Patients receiving DIAMOND care as implemented did not have any statistically better depression outcomes than those receiving usual care, although their satisfaction with care was higher. On the one hand, this study has a much more careful way of identifying a control population for comparison than the Mayo study. On the other hand, it did not include Mayo patients (the largest subset of DIAMOND enrollees) due to difficulties in data sharing at the time of the study enrollment.[7]

Mayo Studies: Mayo providers have done several studies on the patients seen in primary care at Mayo clinics. In each of those studies published, DIAMOND patients have achieved better response (16-28 percent better) and remission rates (20-34 percent better) based on the PHQ-9 than those receiving usual care.

Control populations in these studies were retrospectively matched in all but one study where patients were recruited prospectively such that those in usual care were a combination of patients who were in clinics without DIAMOND available and those who did not enroll in DIAMOND for a variety of reasons. In that study, the DIAMOND response rate was 68.7 percent (versus 52.9 percent in usual care) and the remission rate was 52.7 percent (versus 31.3 percent in usual care) at six months.[8]

The results from the NIMH study are unexpected and disappointing. The NIMH study design is more rigorous, but Mayo patients were mostly excluded. The Mayo studies were not as rigorous, but probably represent what is typically possible in unfunded reviews by practice sites of the outcomes of a practice change.

Neither study gives a comprehensive view of the entire DIAMOND initiative. For example, since the DIAMOND initiative was a quality improvement initiative, there was no control or standard comparison group for DIAMOND. The real story may be that implementation of a proven model of care in practice is tough and that results will vary considerably by clinic. Future studies need to pay more attention to this variance.

Lessons Learned

Two conclusions can be drawn based on both studies:

- Usual care for depression in Minnesota in the ICSI primary care clinics is very good in comparison to the rest of the country and may have contributed to the HPIER study's inability to show better results for the population.
- A more aggressive treatment-to-target through medication intensification may contribute to better outcomes. One Mayo study[9] showed a significantly greater number of anti-depressant medications ordered for DIAMOND patients when compared to patients receiving usual care. Trends in the

DIAMOND patient registry showed that medication changes over an eight-month period were about half of that seen in the IMPACT study.

Advancing Integration of Mental Health and Primary Care

ICSI is taking the lessons learned from these DIAMOND studies and other ICSI work to continue to improve the integration of mental health and medical care.[10] Advances in this area stemming from the DIAMOND initiative to date include the following:

Health Care Home Blueprint

ICSI trained staff on team-based care management at almost 100 primary care clinics. After working with the DIAMOND model, many clinic administrators and physicians reported implementing it helped them create a team-based culture, redefine staff roles, improve workflow and better integrate mental health into their practices – all requirements of a health care home.

Participating clinics have also found that their patient follow-up processes have become more efficient and team communication has improved.

Performance Measurement

Implementing DIAMOND resulted in the adoption of the PHQ-9 through MN Community Measurement to establish measures for clinic performance for patients with depression; the National Quality Forum adopting ICSI's depression measures; and use of the PHQ-9 as the standard for screening patients for depression.

Extension/Expansion of the Model

DIAMOND provided an opportunity for expansion to other mental health conditions (Mayo Clinic's CALM program offering therapy for anxiety in primary care) and the adolescent population (Mayo Clinic's EMERALD program adapting collaborative depression care to adolescent patients).

The DIAMOND model was adapted as part of the Partners in Integrated Care (PIC) program, an Agency for Healthcare Research and Quality-funded dissemination project to integrate depression and substance use screening and management in primary care. This four-state initiative also included the Pittsburgh Regional Health Initiative, the Wisconsin Collaborative for Healthcare Quality, the Wisconsin Initiative to Promote Healthy Lifestyles, and the Massachusetts Health Quality Partners.

Elements of DIAMOND, TEAMCare and SBIRT (Screening, Brief Intervention and Referral to Treatment) were combined into the COMPASS (Care Of Mental, Physical, And Substance-use Syndromes) model. Funded by a Center for Medicare and Medicaid Innovation award, ICSI is leading a 10-member consortium to spread the COMPASS model across more than 180 primary care clinics in nine states. COMPASS is a collaborative care management model designed to treat patients with depression and diabetes and/or cardiovascular disease, with an option to also address risky substance use using SBIRT.

ICSI has also helped the Minnesota Behavioral Health Depression Collaborative establish best practices for depression care by applying elements of the DIAMOND model in behavioral health clinic workflow. In addition, ICSI led a depression care collaborative for clinics in 11 states for the National Council for Behavioral Health.

Based on its DIAMOND expertise, ICSI was selected by the Minnesota Department of Human Services in 2011 to work with Assertive Community Treatment (ACT) teams to create systems to track, coordinate and co-manage preventive and chronic medical disease care for patients with serious mental illnesses.

Footnotes

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For More Information

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