

Chronic Disease Management for Depression in Primary Care: A Summary of the Current Literature and Implications for Practice

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Objective: To review randomized controlled trials (RCTs) evaluating chronic disease management models for depression in primary care and to look at the implications for clinical practice in Canada.

Methods: We reviewed all RCTs conducted between 1992 and 2006, including other reviews and analyses of pooled data. Using various search terms, we searched PsycINFO, Cinahl (1982 to May 2005), MEDLINE (1995 to 2005), EMBASE, The Cochrane Library, and PubMed.

Results: There is conclusive evidence for the benefits of changing systems of care delivery to support the more effective management of depression in primary care. Most studies have demonstrated improved outcomes in terms of symptom reduction, relapse prevention, functioning in the community, adherence to treatment, community and workplace involvement, and satisfaction with care received.

Conclusions: Primary care practices need to examine how they can incorporate different concepts and models for managing depression. Components to consider include case registries, care managers or coordinators, treatment algorithms, follow-up and monitoring after a treated episode, care and relapse prevention plans, visits by psychiatrists, and training and ongoing education for all providers.

(Can J Psychiatry 2007;52:77–85)

Information on funding and support and author affiliations appears at the end of the article.

Clinical Implications

- Depression can be more effectively managed in primary care if changes can be made to the way care is organized.
- Primary care practices need to be able to regularly monitor individuals both during and after treatment of an episode of depression.
- Psychiatrists can play important and effective roles by visiting primary care settings to discuss and assess individuals who suffer from depression.

Limitations

- Many of these findings come from research-oriented primary care settings, and it is unclear how best to adapt them to real-world practices.
- Family physicians will have difficulty finding the time to make the changes required to manage individuals with depression more effectively.
- Additional funding is not always available to allow depression care managers to work in primary care.

Key Words: *chronic disease management, depression, primary care, system redesign, care management*

Depression is one of the commonest health conditions managed in primary care, with the point prevalence ranging from 4.8% to 8.6%^{1,2}; further, it is a recurrent, rather than an episodic, condition. About 60% of patients who are recognized as having a major depression by their family physician have had 2 or more prior episodes,³ and 36% have a recurrence within 1 year of symptom resolution.⁴

Despite the high prevalence, only about 30% of individuals with depression receive any treatment.^{5,6} About 50% of people diagnosed receive appropriate antidepressant treatment,^{7,8} but less than 20% of patients started on an antidepressant are seen a minimum of 3 times in the following 3 months to monitor their progress.⁹ One-third of patients discontinue antidepressants within the first month,⁴ and less than 50% adhere to treatment for 3 months.¹⁰ Less than 10% of individuals with depression receive appropriate psychotherapies.¹¹

This is significant apart from the impact on the their well-being. Individuals suffering from depression generate twice the health care costs of other primary care attenders,¹² and untreated depression in individuals with comorbid chronic health conditions increases morbidity and mortality rates and reduces the capacity for self-management.¹³

Thus, although the prevalence of depression in primary care is high, detection, treatment, and referral rates are low; moreover, even if treatment is initiated, most patients do not receive adequate follow-up. This is not so much due to oversights by individual practitioners or to ineffective treatments as it is due to problems in the way that systems of care are organized. Models of care usually focus on acute treatment with short, and often unprepared, appointments; an emphasis on triage and patient flow; and patient-initiated follow-up.¹⁴ As a result, family physicians focus on those individuals being seen, rather than on the entire population of a practice, and often fail to provide appropriate follow-up and monitoring.¹⁵

These problems were summarized in a 2001 report from the US Institute of Medicine that stated, “these quality problems occur typically not because of failure of good will, knowledge, effort or resources directed to health care but because of fundamental shortcomings in the way care is organized.”¹⁶ What is required are new approaches to service delivery that focus on a population; that deliver comprehensive services

ranging from health promotion to ongoing follow-up and monitoring, according to the best available evidence^{11,17}; and that empower individuals to take greater responsibility for managing their own care and health problems. Achieving this, as the US Institute of Medicine Report pointed out, ultimately requires reorganization of health delivery systems.¹⁸ It was the need for such comprehensive changes that led to the emergence of new models for managing chronic diseases.

Disease Management

The Disease Management Association of America delineated 6 components that need to be present for effective chronic disease management.¹⁹ These are:

- Population identification processes.
- Evidence-based practice guidelines.
- Collaborative practice models that include physicians and support service providers.
- Patient self-management and education.
- Process and outcomes measurement, evaluation, and management.
- Routine reporting–feedback loops to the patient, physician, other providers, and other sectors.

These components form the basis of all disease management approaches, although there is some variation in their definition or implementation. Wagner formalized these concepts within the CCM, which he derived from evidence-based practices and literature reviews.¹⁷ The CCM identifies 6 essential elements of a health care system that advance high-quality chronic disease care. It has guided or influenced health delivery system reform in the United States, in Canada, and in many other countries. These elements are:

- System redesign to ensure the delivery of effective, proactive clinical care and self-management support through well-functioning teams with clear roles for all team members; planned interactions to support evidence-based care; case management; and regular follow-up.
- Self-management support to empower and prepare patients to take greater responsibility for managing their own health care.
- Decision support to promote clinical care that is consistent with scientific evidence by embedding evidence-based guidelines into clinical practices, ensuring provider education, and integrating specialist expertise within primary care.
- Information systems (that is, registries) that help to organize patient and population data to facilitate efficient and effective care by tracking individuals, identifying relevant subpopulations, facilitating care planning,

Abbreviations used in this article

BTS	BreakThrough Series
CBT	cognitive-behavioural therapy
CCM	chronic care model
CDM	chronic disease management
PROSPECT	Prevention of Suicide in Primary Care Elderly: Collaborative Trial
RCT	randomized controlled trial

providing reminders, and monitoring team performance and outcomes.

- Organizational changes to create a culture and mechanisms that promote safe, high-quality care by setting clear goals and providing direction and support that is reflected at all levels, including changed management strategies and incentives based on quality of care
- Links with community resources, created through partnerships with community organizations and by encouraging patients to participate in relevant community programs.

Disease Management for Depression

The literature on managing depression in primary care over the last 10 years reflects the evolution from relatively simple interventions to increasingly complex, multifaceted programs that address both system and treatment issues.

Methods

This summary review examines data from RCTs, reviews of RCTs including metaanalyses and analyses of pooled data, and data from the BTS, published between 1993 and 2006. We identified studies from searches of PsycINFO, Cinahl (1992–2005), MEDLINE (1995–2005), EMBASE, the Cochrane Library, and PubMed, using various search terms.

The BreakThrough Series

The BTS is a collaborative learning and system improvement model developed by the Institute for Healthcare Improvement.²⁰ The model brings together teams of at least 3 participants from primary care organizations or practices. Participants represent organizational leaders, technical experts, and clinical leaders. Over the course of a year, the teams participate 2 or 3 times in “collaboratives” to improve in a defined practice area. Collaboratives offer participants various tools, such as registry templates, questionnaires, and guidelines; monthly feedback from summary reports prepared by the teams; and conference calls and email contact as needed.

Katzelnick²¹ reviewed results from 20 health care organizations that participated in the BTS on depression. Of the 10 teams with the best outcomes, the most important CCM change elements were the establishment of a patient registry, care coordination, diagnostic assessment, and proactive follow-up. Other helpful changes included interactive education for providers on depression guidelines, patient education techniques and self-management materials, attention to “red flags” or clinical hints suggesting a patient should be assessed for depression, evidence-based treatments based on the Agency for Health Care Policy and Research depression guideline,²² collaboration between physician and patient to set

treatment goals and engage in problem-solving, a tracking and monitoring system using a follow-up file or patient registry, and consultation on the part of a psychiatrist.

Over 2000 patients were included in depression registries. Of these patients, 56% had significant improvement in their symptoms at 12 weeks, 87% completed follow-up assessments, 54% continued antidepressant medication for at least 10 weeks, and 90% completed a structured diagnostic assessment before treatment. Evidence from other BTS collaboratives suggested that outcomes for CDM programs for depression were superior to those for other chronic conditions.

Evidence From RCTs of Interventions in Primary Care

Several multifaceted RCTs have evaluated the impact of incorporating selected CDM components into managing depression in primary care. The most frequent interventions in these studies were as follows:

- Use of a case care manager to coordinate care (this includes medication adherence and monitoring, screening, assessment and development of treatment plans, system navigation, patient education, providing treatment, and providing advice to other team members).
- Provider education.
- Feedback to the family physician.
- Screening for depression.
- Psychiatric consultation to the family physician or care manager.
- Implementation of a treatment algorithm.
- Specialized mental health treatment (usually CBT) in primary care.
- Telephone treatment or support.
- Self-management workbooks.
- Personalized treatment plans.
- Relapse-prevention plans.
- Consumer education materials, especially videos.
- Development of a registry.
- Well-functioning treatment teams.

Specific Trials

Katon²³ conducted an RCT with 156 patients to compare usual care with a structured, manualized depression treatment program in primary care accompanied by patient education, physician education, 4 to 6 CBT sessions with a psychologist, a written relapse prevention plan, monitoring for medication adherence, and regular team meetings to review cases with the psychiatrist. At 4 months, intervention patients were more

satisfied than regular care patients. Patients with major depression showed significant improvement, compared with control subjects, but there was no between-group difference for minor depression or for medication adherence.

Hedrick²⁴ assessed the impact of collaborative care on 354 patients in a Veterans Affairs primary care clinic. The intervention included provider education, patient education, telephone follow-up by social workers, weekly team meetings, feedback for the family physician, and monitoring of response to these recommendations. Collaborative care patients experienced greater symptom reduction and less disability at 3 months, but not at 9 months.

Simon²⁵ compared usual care for 228 patients with either usual care plus feedback to the physician about medication dosage adjustments and regular follow-up or usual care plus feedback as above plus care management. Care managers periodically telephoned patients to monitor their symptoms and treatment adherence, provided the physician with feedback after each contact (including algorithm-based recommendations), and assisted the physicians in implementing management plans.

Compared with usual care, feedback on its own had no significant effect on treatment received or on patient outcomes. Patients who received feedback plus care management had a higher probability of receiving appropriate dosages of antidepressants and a 50% improvement in depression scores, lower mean depression scores at follow-up, and a lower probability of major depression at follow-up. The cost of feedback plus care management was about \$80 per patient.

Rost²⁶ studied 211 patients in 12 primary care practices across the United States to determine whether improved depression treatment would increase remission rates and improve functioning over 24 months. She compared usual care with an intervention that included training primary care providers in the model, guideline-based pharmacotherapy, guideline-based psychotherapy, and care managers who provided assessments, feedback, patient education, and telephone follow-up.

Enhanced care increased patients' use of antidepressants and counselling at 6 and 12 months and significantly improved their remission rates and emotional and physical functioning, compared with control subjects. At 2-year follow-up, the intervention group had a significantly increased number of days free of depression impairment, as well as increased work productivity and reduced absenteeism rates, compared with control subjects.

The study also compared outcomes for rural and urban settings, finding a greater effect size in the rural settings, particularly in regard to patients following through with visits to a mental health specialist.²⁷ This reinforced Hartley's finding²⁸

that enhancing the care delivered in primary care settings in rural communities is likely to be more effective in reducing depressive symptoms than efforts to recruit more mental health specialists.

The estimated annual cost of the intervention was \$619 for each participant with depression, which is consistent with other studies that have estimated the cost to be between US\$200 and US\$600 per patient treated.^{13,18–29,30}

Telephone Follow-Up

Simon³¹ included 613 patients in a comparison of usual care with the following:

- Usual care plus a telephone care management program including at least 3 scripted telephone calls, feedback to the family physician, care coordination, support from an electronic decision support system, and a self-management workbook but no supervision about its use.
- Usual care plus care management integrated with structured, 8-session CBT delivered via the telephone and based on the self-management workbook.

Telephone CBT led to lower depression scores, with a higher proportion of patients (59%) reporting that their depression was "much improved" and feeling "very satisfied" with their depression treatment, compared with usual care patients (29%). The telephone care management program had smaller effects on patient-related improvement (66%, compared with 55% for usual care) and satisfaction (47%, compared with 29% for usual care).

This was consistent with findings of an RCT³² of 302 patients that compared usual care with the following:

- Usual care plus up to 14 preplanned, structured telephone calls of less than 10 minutes over a 6-month period. These calls were made by a primary care nurse to provide support and encourage medication compliance and were followed by feedback to the physician or by telephone care.
- Telephone contact augmented by peer support.

Nurse-based telephone care was significantly superior to usual physician care with respect to symptom reduction, functioning, and satisfaction with treatment. Adding peer support to telehealth care did not improve the outcomes.

Relapse Prevention

Ludman³³ conducted an RCT of specialty support provided for about 1 year to 194 patients at high risk of relapse after they successfully completed treatment. Usual care was compared with a maintenance plan conducted by a depression prevention specialist working in tandem with the primary care physician, with supervision and backup from a consulting psychiatrist. This included depression education materials;

motivation-enhancing shared decision making about maintenance pharmacotherapy; cognitive-behavioural strategies; a written, personalized relapse prevention plan; scheduled telephone calls every 4 to 6 weeks to review medication adherence and commitment to the relapse prevention plan; written, personalized feedback initiated by the depression prevention specialist; and bimonthly meetings with a consulting psychiatrist to review patient care and pharmacotherapy.

Key results included significantly greater adherence to medication over a 1-year period and a significant improvement in symptom outcomes for intervention patients, compared with usual care patients.

Katon³⁴ also evaluated the impact of a relapse prevention intervention on adherence to antidepressant medication and symptomatology. The subjects were 386 patients with recurrent depression or dysthymia who had essentially recovered after 8 weeks of antidepressant treatment by their family physician. The intervention included 2 primary care visits with a depression specialist; 3 telephone contacts over a 1-year period to enhance medication adherence, recognize prodromal symptoms, and monitor symptoms; and a written relapse prevention plan. Blinded follow-up telephone assessments were conducted at 3, 6, 9, and 12 months.

Patients in the intervention group had significantly greater adherence to an adequate dosage of antidepressant medication for 90 days or more within the first and second 6-month periods and were significantly more likely to refill medication prescriptions. They had significantly fewer depressive symptoms but no fewer episodes of relapse or recurrence over the 12-month follow-up period.

Quality Improvement Programs

Wells³⁵ looked at the impact of a quality improvement program for depression in 48 primary care clinics in 6 US managed care organizations covering 1356 patients. The study matched clinics randomized to usual care with those employing a comprehensive quality improvement program plus either pharmacotherapy or psychotherapy. The intervention sites offered physician education, clinic or clinician manuals and lectures, education of practice nurses to provide assessments on manual-based activation, patient education materials, nurse assessments with feedback, and either a medication protocol or CBT provided by psychotherapists.

Counselling and medication rates were significantly higher in the intervention groups at 6, 8, and 12 months. Interventions increased the probability of appropriate care in the follow-up period by 10%. Intervention patients were less likely to have probable depression at 6 months and 12 months. In the control group, more patients with major depression improved in the first 6-month period, whereas patients with symptoms only

(diagnosis not confirmed) improved more in the second 6-month period.

The Re-Engineering Systems for the Primary Care Treatment of Depression trial⁴⁰ ($n = 405$ patients) was a randomized controlled cluster trial of an evidence-based model for management of depression in primary care with support from quality improvement resources. To be included, practices needed to have quality improvement measures in place, an affiliation with a psychiatrist, and care managers already working within the organization. The primary care physician was responsible for initial management as well as follow-up care. The intervention had 3 components: care management, telephone support, and psychiatrist consultation.

At 6 months, 60% of the intervention patients had responded to treatment, compared with 47% of patients receiving usual care; 37% of the intervention patients demonstrated remission, compared with 27% of usual care patients; and 90% of the intervention patients rated their depression care as good or excellent, compared with 75% of usual care patients.

High Users

Katzelnick³⁶ conducted an RCT to assess the impact of offering a systematic, depression management program based on primary care to 407 depression patients classified as high users (that is, their visit frequency was above the 85th percentile over the previous 2 years). The intervention included patient education materials, physician education programs, telephone-based treatment coordination, a pharmacotherapy algorithm including scheduled follow-up visits, a depression education program, and psychiatric consultation for patients not responding to treatment after 10 weeks.

In the first 6 months, 96% of the intervention patients filled at least 3 antidepressant prescriptions, compared with 18.5% of the usual care patients. Improvements in depression scores were significantly greater in the intervention group at 6 weeks and at 3, 6, and 12 months. At 12 months, intervention patients showed significantly more improvement than usual care patients on the Mental Health, Social Functioning, and Current Health Perceptions scales of the 20-Item Short Form Health Survey.

Programs for Seniors

Unutzer³⁸ assessed the effectiveness of a collaborative care management program (the Improving Mood Promoting Access to Collaborative Treatment program for late-life depression). In this program, 1801 patients were randomly assigned to usual care or an intervention that included patient education materials; meetings with a depression care specialist or care manager; a treatment plan developed by the depression care specialist, family physician, and patient; a stepped approach based on a treatment algorithm; weekly team

meetings with a psychiatrist; and liaison with the primary care physician.

At 12 months, 45% of the intervention patients had a 50% or greater reduction in depressive symptoms, compared with 19% of the usual care patients. Intervention patients also had higher rates of depression treatment, more satisfaction with depression care, reduced severity of depressive symptoms, less functional impairment, and greater quality of life. There was also a significant reduction in chronic pain symptoms and functioning limitations among individuals with comorbid arthritis. The cost was \$553 per patient.

Bruce³⁹ conducted an RCT designed to determine the effect of a primary care intervention on suicidal ideation and depression in 598 older adults (the PROSPECT study). It compared usual care (supplemented by information about treatment guidelines) with an intervention that included a clinical algorithm, care managers, interpersonal psychotherapy, guideline-based advice given to the family physician by the care manager, psychiatric backup including weekly supervision for the care managers, regularly scheduled telephone contacts, monthly supervision in interpersonal therapy for the care managers, and follow-up with patients at 4, 8, and 12 months, either in person or by telephone.

Suicidal ideation resolved more quickly in patients from the intervention group, with differences peaking at 8 months (70.7%, compared 43.9% of usual care patients). Intervention patients had a more favourable course of depression in terms of both the degree and speed of symptom reduction.

A further report from the PROSPECT study⁴⁰ compared time to first remission for elderly depression patients in practices that implemented a care management model with time to first remission in usual care patients. Over 18 months, first remission occurred earlier and was more common among patients receiving the intervention. Patients experiencing hopelessness were more likely to achieve remission if treated in intervention practices.

Reviews of RCTs

Recent reviews of RCTs of CDM programs for depression have either compared program findings or reviewed pooled results.

Ofman⁴¹ reviewed the clinical and economic effects of disease management in patients with chronic diseases as described in 102 articles that evaluated 118 disease management programs in various settings. Of the 11 chronic conditions represented, depression management programs had the highest percentage of outcome comparisons demonstrating substantial improvements in patient care (41 of 86 programs, or 48%). Disease management further appeared to improve patient satisfaction

in 12 of 17 programs (71%), patient adherence in 17 of 36 programs (47%), and disease control in 33 of 74 programs (45%).

Gilbody⁴² selected 36 studies (29 of which were RCTs) and conducted a narrative synthesis examining the effectiveness of organizational and educational interventions in improving depression management in primary care. The interventions were multifaceted, using several chronic care strategies. Effective strategies were generally more complex, incorporated clinician education, used nurse case managers, integrated specialized services with primary care, and included telephone medication counselling. Two components that were not demonstrated to be effective on their own were guideline implementation and educational strategies. (A list of these studies can be found at <http://www.york.ac.uk/inst/crd/ehcb.htm>.)

Badamgarav⁴³ reviewed 19 disease management programs for depression that were active between 1987 and 2001. Pooled results demonstrated statistically significant improvements in depression symptoms, patient satisfaction with treatment, patient compliance with treatment recommendations, and adequacy of the prescribed treatment. He concluded that disease management appeared to improve the detection and care of patients with depression and recommended widespread implementation of programs, with further research needed in the area of cost-effectiveness.

In a 2001 editorial reviewing RCTs of interventions to improve primary care for patients with major depression, Von Korff and Goldberg⁴⁴ found that interventions that consistently improved patient outcomes incorporated some form of case management and specialist involvement and support. Case management—often provided by telephone—involved taking responsibility for following patients, monitoring adherence to treatment and symptom improvement, and taking action to remedy these, if necessary. The integrated psychiatrists consulted to the family physician, supervised the case manager, and saw complex cases, if necessary. Von Korff and Goldberg concluded that efforts to improve the primary care treatment of depression should focus on low-cost case management and “fluid and accessible working relationships among the primary care doctor, case manager and mental health specialist.”^{44 p 949}

This finding was reinforced by Craven and Bland,⁴⁵ who conducted a systematic review of 38 studies of collaborative mental health care in primary care, 14 of which could be considered to be CDM programs for depression. They also suggested that systematic follow-up was an important predictor of positive outcomes, that treatment algorithms linked with increased collaboration were more beneficial than either intervention on its own, that care managers could increase

medication adherence, and that patient education materials were a component of many studies with positive outcomes.

Neumeyer-Gromen⁴⁶ conducted a systematic review and metaanalysis of RCTs investigating the effectiveness of disease management programs for depression. Disease management was comprehensively defined to include evidence-based practice guidelines, self-management education, provider education, screening, routine reporting and feedback loops, collaborative practice models, interdisciplinary discussion of treatment options, regular reassessment, and reminder systems.

Disease management programs were found to significantly enhance the quality of care for depression. More specifically, disease management programs had a significant effect on depression severity. Patient satisfaction and adherence to the treatment regimen also improved significantly.

Gensichen⁴⁷ conducted a metaanalysis of 13 RCTs of care management for depression in primary care. Data were pooled for intervention complexity and for analyses of different subgroups (that is, symptom severity, remission, clinical response, and medication adherence). Care management had a positive effect for all outcomes measured, although there was no significant difference between standard (at least the systematic monitoring of symptoms) and complex case management.

Discussion

When viewed collectively, these studies present consistent and convincing evidence of the benefits of changing the way systems of care are organized for depression patients seen in primary care. These changes are also applicable to mental health programs.

Central to all models of improved systems of care for individuals with depression in primary care is a redesign of the way services are organized and delivered. This includes the incorporation (where available) of mental health care managers or coordinators, visits by psychiatrists in a stepped model of care, and changes in treatment protocols to include screening and routine follow-up of individuals during and after treatment. A second key component is support to enable patients to better manage their own problems, given through interactive education, increased access to relevant records and reports, and peer support.

These treatments need to be based on the best available evidence coming from treatment algorithms incorporated in the chart or from the presence of specialized mental health providers in primary care, and they need to be supported by information technology that will allow registers to be compiled, by organizational leadership that promotes a shared vision and

purpose, and by strong links with relevant community providers.

The evidence suggests that most interventions will be more effective if supported by system changes that reinforce their impact and by greater collaboration between different providers. For example, screening for depression only leads to better outcomes if it is linked with treatment.⁴⁸ Similarly, the care manager's role is more effective if regular feedback is provided to the primary care provider.^{10,45} Nevertheless, even simple interventions, such as designing mechanisms to ensure there is regular follow-up of individuals during or after treatment, can bring about improvements in treatment compliance and outcomes.

Future Research Directions

There remains a need for Canadian data to determine whether these findings can be replicated in a differently organized and funded health system. Many of the studies reviewed have also acknowledged that, although it is difficult to separate out the effects and cost-benefits of specific components in a multifaceted intervention, the different effects of these components needs to be better understood. There is also a need to look at the impact of treating comorbid depression on the outcomes of other chronic health conditions.

A weaker area of many of the studies conducted to date has been the limited emphasis on self-management support (as opposed to patient education). Future studies need to examine the impact of system changes required to support innovative approaches⁴⁹ for self-management support.

With the exception of the BTS projects, the studies described in this article were conducted in self-selected clinical settings interested in innovation or in measuring change. These received additional funding to recruit the extra resources required. For various reasons, they often excluded many patients who routinely present with depression in their family physician's office. Also, it is not easy to adapt such interventions to the real world of busy and often overextended family physicians,⁵⁰ who face increasing demands from multiple sectors to play a broader role in patient care while still dealing with the acute problems that present in their office each day—what Bodenheimer referred to as “the tyranny of the urgent”^{51, p 1775}. This makes it difficult to shift their focus to, or find the time for, different approaches to managing chronic conditions. Innovation can be facilitated by developing interdisciplinary teams to share the management tasks, but there is a need to evaluate what can be done in practices where care coordinators and psychiatrists are not available. One simple, low-cost intervention that can be integrated in any practice is the development of protocols to ensure that any individual with depression is seen or contacted by telephone or in person routinely and regularly, both during and after treatment of an

episode, to monitor his or her progress and compliance with the treatment plan.

The findings from the studies discussed in this paper suggest that primary care settings could consider the following options as a starting point for the better management of individuals with depression:

- The use of a screening instrument such as the Patient Health Questionnaire-9,⁵² which can be built in to the health record as a template. Screening can also be conducted by asking 2 questions (about mood and enjoyment of activities) in any interview.⁴⁹ These questions could also be asked routinely when assessing an individual with a chronic medical condition.
- The incorporation within the clinical record of a treatment algorithm for depression—including guidelines for follow-up visits.
- A care manager responsible for coordinating and monitoring care and assisting patients in using community resources. If specialized mental health staff are not available, this role can be taken on by a practice nurse.
- Visits from a psychiatrist who will consult to the family physician and case manager and see complex cases as required.
- The development of registries (electronic or paper) that include every individual in a practice with a prior diagnosis of depression or a history of treatment with an antidepressant, so that these individuals can be monitored and proactive care initiated. Registries can be constructed directly from some electronic medical records, or they may require either specialized software or a spreadsheet such as Excel. If none of these alternatives are feasible, they can be compiled with pen and paper.
- Greater use of the telephone for monitoring treatment compliance and response and for proactive follow-up of individuals at risk.
- The development of a plan of care that includes a patient's personal goals and current treatments, a copy of which should be given to the patient to bring to every appointment with any health care provider.
- Increased support for self-management, such as providing patients with access to their complete medical records and to all pertinent information about their care (including medications), often provided through a website entered with a secure password.
- A plan to prevent relapse after recovery from an episode.
- Regular follow-up visits or telephone check-ups after treatment has been completed.
- Prepared visits, for which the team ensures that all relevant data and required resources are available before a patient arrives.
- Adequate preparation and ongoing education for all primary care staff

Summary

Many problems exist in the way depression is managed in primary care, often owing to shortcomings in the way systems of care are organized to manage chronic problems. New models that have emerged over the last 10 years and involve multifaceted interventions have demonstrated their effectiveness in improving outcomes for depression patients seen and treated in primary care settings. Although it is not clear which components of these multifaceted interventions are most likely to bring about beneficial outcomes, many can be easily adopted by primary care practices in Canada and incorporated into daily management with little need for additional resources.

Funding and Support

This study was supported by a grant from the Ontario Ministry of Health and Long Term Care and the Ontario Mental Health Foundation.

References

1. Katon W, Schulberg H. Epidemiology of depression in primary care. *Gen Hosp Psychiatry*. 1992;14(4):237–247.
2. Olfson M, Shea S, Feder A, et al. Prevalence of anxiety, depression and substance abuse disorders in an urban general medicine practice *Arch Fam Med*. 2000;9(9):876–883.
3. Katon W, Von Korff M, Lin E, et al. Collaborative management to achieve treatment guidelines: impact on depression in primary care. *JAMA*. 1995;23(13):1026–1031.
4. Lin EHB, Katon W, Von Korff M, et al. Relapse of depression in primary care: rate and clinical predictors. *Arch Fam Med*. 1998;7(5):443–449.
5. Lesage AD, Goering P, Lin E. Family physicians and the mental health system. Report from the Mental Health Supplement to the Ontario Health Survey. *Can Fam Physician*. 1997;43:251–256.
6. Young A, Klap R, Sherbourne C, et al. The quality of care of depressive and anxiety disorders in the United States. *Arch Gen Psychiatry*. 2001;58(1):55–61.
7. Simon G, Von Korff M, Wagner EH, et al. Patterns of antidepressant use in community practice. *Gen Hosp Psychiatry*. 1993;15(6):399–408.
8. Lin E, Von Korff M, Katon W, et al, and the Depression Guideline Panel. The role of the primary care physician in patients' adherence to antidepressant therapy. *Med Care*. 1995;33(1):67–74.
9. Depression Guideline Panel. Depression in primary care: detection and diagnosis. Rockville (MD): US Dept of Health and Human Services, Public Health Service, Agency for Health Care Policy and Research; 1993.
10. Katon W, Von Korff M, Lin E, et al. Rethinking practitioners' roles in chronic illness: the specialist, primary care physician, and the practice nurse. *Gen Hosp Psychiatry* 2001;23(3):138–144.
11. Katon W, Von Korff M, Lin E, et al. Population-based care of depression: effective disease management strategies to decrease prevalence. *Gen Hosp Psychiatry*. 1997;19(3):169–178.
12. Simon GE, Von Korff M, Barlow W. Health care cost of primary care patients with recognized depression. *Arch Gen Psychiatry*. 1995;52(10):850–856.
13. Bodenheimer T, Lorig K, Holman H, et al. Patient self-management of chronic disease in primary care. *JAMA*. 2002;288(19):2469–2475.
14. Holman H. Chronic disease—the need for a new clinical education. *JAMA*. 2004;292(9):1057–1059.
15. Wagner EH. Chronic disease management. What will it take to improve care for chronic illness? *Eff Clin Pract*. 1998;1(1):2–4.
16. Committee on Quality of Health Care in America. Crossing the quality chasm: a new health system for the 21st Century. Washington (DC): National Academy Press; 2001.
17. Wagner E, Austin B, Von Korff M. Organising care for patients with chronic illness. *Millbank Quarterly*. 1996;74(4):511–544.
18. Katon W. The Institute of Medicine "Chasm" report: implications for depression collaborative models. *Gen Hosp Psychiatry*. 2003;25(4):222–229.
19. DMAA definition of disease management [Internet]. Disease Management Association of America.
20. Institute for Healthcare Improvement. The Breakthrough series IHI's Collaborative model for achieving breakthrough improvement. Boston (MA): IHI; 2003. Available from:

- <http://www.ihl.org/IHI/Results/WhitePapers/TheBreakthroughSeriesIHICollaborativeModelforAchieving+BreakthroughImprovement.htm>.
21. Katzelnick DJ, Von Korff M, Chung H, et al. Applying depression-specific change concepts in a collaborative breakthrough series. *Jt Comm J Qual Patient Saf.* 2005;31(7):386-397.
 22. Agency for Health Care Policy and Research. Depression in primary care: detection, diagnosis, and treatment. *Clin Pract Guidel Quick Ref Guide Clin.* 1993;(5):1-20.
 23. Katon W, Robinson P, Von Korff M, et al. A multifaceted intervention to improve treatment of depression in primary care. *Arch Gen Psychiatry.* 1996;53:924-932.
 24. Hedrick S, Chaney E, Felker B, et al. Effectiveness of collaborative care in Veterans' Affairs primary care. *J Gen Int Med.* 2003;18(1):9-16.
 25. Simon GE, Katon WJ, VanKorff M, et al. Cost-effectiveness of a collaborative care program for primary care patients with persistent depression. *Am J Psychiatry.* 2001;158(10):1638-1644.
 26. Rost K, Nutting P, Smith J, et al. Improving depression outcomes in community primary care practice—a randomized trial of the quEST intervention. *Quality Enhancement by Strategic Teaming. J Gen Intern Med.* 2001;16(3):143-149.
 27. Smith JL, Rost KM, Nutting PA, et al. A primary care intervention for depression. *J Rural Health.* 2000;16(4):313-323.
 28. Hartley D, Korsen N, Bird D, et al. Management of patients with depression by rural primary care practitioners. *Arch Fam Med.* 1998;7(2):139-145.
 29. Von Korff M, Gruman J, Schaefer J, et al. Collaborative management of chronic illness. *Ann Intern Med.* 1997;127(12):1097-1102.
 30. Schoenbaum M, Unutzer J, Sherbourne C. Cost-effectiveness of practice initiated quality improvement for depression: results of a randomized controlled trial. *JAMA.* 2001;286: 5325-5330.
 31. Simon GE, Von Korff M, Rutter C, et al. Randomised trial of monitoring, feedback, and management of care by telephone to improve treatment of depression in primary care. *BMJ.* 2000;320(7234):550-554.
 32. Hunkeler EM, Meresman JF, Hargreaves WA, et al. Efficacy of nurse telehealth care and peer support in augmenting treatment of depression in primary care. *Arch Fam Med.* 2000;9(8):700-708.
 33. Ludman E, Von Korff M, Katon W, et al. The design, implementation, and acceptance of a primary care-based intervention to prevent depression relapse. *Int J Psychiatry Med.* 2000;30(3):229-245.
 34. Katon W, Rutter C, Ludman EJ, et al. A randomized trial of relapse prevention of depression in primary care. *Arch Gen Psychiatry.* 2001;58(3):241-247.
 35. Wells K, Sherbourne C, Schoenbaum M, et al. Impact of disseminating quality improvement programs for depression in managed primary care—a randomized, controlled trial. *JAMA.* 2000;283(2):212-220.
 36. Dietrich AJ, Oxman TE, Williams JW Jr, et al. Re-engineering systems for the treatment of depression in primary care: cluster randomised controlled trial. *BMJ.* 2004;329(7466):602-605.
 37. Katzelnick DJ, Simon GE, Pearson SD, et al. Randomized trial of a depression management program in high utilizers of medical care. *Arch Fam Med.* 2000;9(4):345-351.
 38. Unutzer J, Katon W, Callahan CM, et al. Improving Mood-Promoting Access to Collaborative Treatment. Collaborative care management of late-life depression in the primary care setting: a randomized controlled trial. *JAMA.* 2002;288(22):2836-2845.
 39. Bruce M, Ten Have T, Reynolds CF 3rd, et al. Reducing suicidal ideation and depressive symptoms in older primary care patients: a randomized controlled trial. *JAMA.* 2004;291(9):1081-1091.
 40. Alexopoulos GS, Katz IR, Bruce ML, et al. Remission in depressed geriatric primary care patients: a report from the PROSPECT study. *Am J Psychiatry.* 2005;162(4):718-724.
 41. Ofman JJ, Badamgarav E, Henning JM, et al. Does disease management improve clinical and economic outcomes in patients with chronic diseases? A systematic review. *Am J Med.* 2004;117(3):182-192.
 42. Gilbody SM, House AO, Sheldon TA. Routinely administered questionnaires for depression and anxiety: a systematic review. *BMJ.* 2001;322(7283):406-409.
 43. Badamgarav E, Weingarten SE, Henning JK, et al. Effectiveness of disease management programs in depression: a systematic review. *Am J Psychiatry.* 2003;160(12):2080-2090.
 44. Von Korff M, Goldberg D. Improving outcomes in depression. *BMJ.* 2001;323(7319):948-949.
 45. Craven M, Bland R. Better practices in collaborative mental health care: an analysis of the evidence base. *Can J Psychiatry.* 2006;51(Suppl 1).
 46. Neumeier-Gromen A, Lampert T, Stark K, et al. Disease management programs for depression: a systematic review and meta-analysis of randomized controlled trials. *Med Care.* 2004;42(12):1211-1221.
 47. Gensichen J, Beyer M, Muth C, et al. Case management to improve major depression in primary health care: a systematic review. *Psychol Med.* 2006;36(1):7-14.
 48. US Preventive Services Task Force. Screening for depression: rationale and recommendations. *Ann Intern Med.* 2002;136(10):760-764.
 49. Glasgow RE, Davis CL, Funnell MM, et al. Implementing practical interventions to support chronic illness self-management. *Jt Comm J Qual Saf.* 2003;29(11):563-574.
 50. Bodenheimer T. Primary Care—Will it survive? *New Engl J Med.* 2006;355(9):861-864.
 51. Bodenheimer T, Wagner EH, Grumbach K. Improving primary care for patients with chronic illness. *JAMA.* 2002;288(14):1775-1779.
 52. Lowe B, Unutzer J, Callahan CM, et al. Monitoring depression treatment outcomes with the patient health questionnaire-9. *Med Care.* 2004;42(12):1194-1201.

Manuscript received and accepted September 2006.

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Résumé : La prise en charge des maladies chroniques pour la dépression dans les soins primaires — un résumé de la documentation actuelle et des implications dans la pratique

Objectif : Examiner les essais contrôlés randomisés (ECR) évaluant les modèles de prise en charge des maladies chroniques pour la dépression dans les soins primaires, ainsi que les implications dans la pratique clinique au Canada.

Méthodes : Nous avons passé en revue tous les ECR menés entre 1992 et 2006, y compris d'autres études et analyses de données totalisées. À l'aide de divers termes de recherche, nous avons utilisé PsycINFO, Cinahl (1982 à mai 2005), MEDLINE (1995 à 2005), EMBASE, The Cochrane Library, et PubMed.

Résultats : Il existe des données probantes concluantes des avantages que comporte le changement des systèmes de prestation de soins afin de soutenir la prise en charge plus efficace de la dépression dans les soins primaires. La plupart des études ont démontré de meilleurs résultats en ce qui a trait à la réduction des symptômes, à la prévention des rechutes, au fonctionnement dans la collectivité, à l'observance du traitement, à la participation communautaire et en milieu de travail, et à la satisfaction à l'endroit des soins reçus.

Conclusions : Les pratiques des soins primaires doivent examiner comment elles peuvent incorporer différents concepts et modèles pour traiter la dépression. Les composantes à envisager sont notamment des registres de patients, des directeurs ou coordonnateurs des soins, des algorithmes de traitement, un suivi et une surveillance après un épisode traité, des plans de soins et de prévention des rechutes, des visites de psychiatres, et une formation et un perfectionnement continu pour tous les prestataires de soins.