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Community Studies

Improving the Management and Outcomes of Late-Life Depression in Canada

Final Report

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July 10, 2009

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DATE OF REPORT:

July 10, 2009

FUNDING AGENCY:

Canadian Institutes for Health Research: Meetings, Planning and Dissemination Grant [KWS90827] from September 1, 2008 to April 15, 2009.

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IMPROVING THE MANAGEMENT AND OUTCOMES OF LATE-LIFE DEPRESSION IN CANADA

TABLE OF CONTENTS

ABSTRACT	p. 2
EXECUTIVE SUMMARY	p. 3
Introduction	p. 3
Objectives	p. 3
Methods	p. 4
Results	p. 4
Discussion	p. 5
FULL REPORT	p. 6
1 BACKGROUND	p. 6
1.1 The Problem	p. 6
1.2 The Chronic Care Model	p. 6
1.3 Application of the Chronic Care Model to Late-Life Depression	p. 7
2 RATIONALE AND OBJECTIVES	p. 7
2.1 Rationale	p. 7
2.2 Specific Objectives	p. 8
3 METHODS	p. 8
3.1 Phase 1	p. 8
3.2 Phase 2	p. 9
3.3 Phase 3	p. 10
4 RESULTS	p. 10
4.1 Phase 1	p. 10
4.2 Phase 2	p. 10
4.3 Phase 3	p. 12
5 DISCUSSION	p. 12
5.1 Strengths and limitations of the approach	p. 12
5.2 Intervention strategies	p. 13
5.3 Implementation	p. 14
REFERENCES	p. 15
TABLES	p. 20
Table 1: List of solutions developed by participants in Phase 1	p. 20
Table 2: List of solutions with ranking of importance and feasibility (Phase 1 & 2)	p. 23
Table 3: Solutions linked to the Chronic Care Model components	p. 24

ABSTRACT

Depression affects a substantial proportion of Canadian seniors, and is generally a long-lasting and recurrent condition. It frequently occurs among seniors with other medical illnesses and/or disabilities which affect their ability to function. Late-life depression has an important impact on seniors, their family members, and society. Negative effects upon seniors themselves include a reduced ability to function in their daily lives and to manage other medical problems, and increased rates of death. Family members of depressed seniors who play an important role in providing emotional support will often notice a negative impact on their own mental health, which threatens their ability to continue providing care for their elders. Finally, late-life depression leads to increased use of hospital and community services, which imposes a monetary cost on society. Thus, the potential impact of improving the management of late-life depression is substantial and warrants special attention.

The Chronic Care Model (CCM) provides a framework to improve the management and outcomes of chronic medical and emotional conditions like depression through strategies to inform and empower patients (e.g., by helping patients to learn to better care for themselves and giving them a supportive environment in which to do so) and to prepare practice teams to play a proactive management role (e.g., by redesigning the way care is offered, using interdisciplinary teams and clinical information systems, and building strong links to the community). Although these promising new patient-centered approaches to the management of depression in primary care settings have the potential to improve management and outcomes, there remains a gap between the mounting evidence for the effectiveness of these approaches and their implementation into day-to-day clinical practice. Thus, the goals of this project were to identify the barriers and facilitators to the implementation of chronic care intervention models for late-life depression in different Canadian primary care settings and to develop a subsequent research project to test strategies to overcome the barriers.

This project adopts an “integrated knowledge translation” approach, which involves engaging and integrating individuals who will benefit from the results of the research into the research process to: 1) shape the research questions, 2) interpret study findings and decide how best to share them, and 3) move the results of the research into practice. This project was conducted in 3 phases: 1) development of a prioritized list of important and feasible implementation strategies suited for different Canadian primary care settings; 2) feedback from additional partners; 3) joint preparation of a grant proposal to implement and evaluate selected strategies.

In Phase 1, a conference brought together 20 researchers and partners from Quebec and Ontario. Conference participants included family physicians, geriatric psychiatrists, nurses, social workers, health care administrators, members of community-based mental health teams, and representatives of a community organization for seniors. A structured method was used to gather ideas and identify and rank potential solutions, allowing the group to reach a decision. Among the most important solutions were: increasing family physician awareness of community resources, increasing resources for collaborative care, and direct support of family physicians by mental health teams.

In Phase 2, additional knowledge users across Canada were asked to provide feedback on the potential solutions agreed upon during the conference. In Phase 3, interested researchers and partners jointly prepared a proposal for an implementation study that was submitted to the Partnerships for Health System Improvement program of the Canadian Institutes for Health Research.

EXECUTIVE SUMMARY

Introduction

Depression in Canadian seniors is a serious problem. The prevalence of major depressive disorder in the general population aged 65 and over is at least 1 to 3%, and an additional 8 to 16% have clinically significant depressive symptoms. The presence of depression doubles the rates of use of emergency departments and medical inpatient hospital services, even after adjustment for sociodemographic variables and disease severity. The presence of depression also threatens the ability of older adults to function independently, and increases their risk of mortality. Depression in medically ill older adults is also associated with prolonged mental health impairment among their family caregivers, and increased time spent by these caregivers on emotional support and other non-physical aspects of caregiving, potentially reducing their ability to support the patient in managing their chronic physical illnesses and leading to need for increased support and even institutionalization. Thus, the potential economic impact of improving the management of late-life depression is substantial and warrants special attention.

The Chronic Care Model (CCM) provides a framework to improve the management and outcomes of chronic conditions through strategies to inform and empower patients (e.g., through guided self-care and creation of a supportive environment) and to prepare practice teams to play a proactive management role (e.g., using redesigned delivery systems, interdisciplinary teams, clinical information systems, and strong community links). A mounting body of evidence on the application of components of the CCM (e.g. patient education, case management, and psychiatric collaboration) to the management of depression in primary care shows use of model is effective in improving patient outcomes. Simple guideline implementation and education are generally ineffective.

Although these promising new approaches to the management of depression in primary care settings have the potential to improve management and outcomes, there remains a gap between the mounting evidence for the effectiveness of these approaches and their implementation into day-to-day clinical practice. Furthermore, the feasibility and barriers to implementation of these interventions among seniors (who frequently suffer from medical comorbidity, physical disability, cognitive and sensory impairments) have seldom been explicitly examined. Interventions for this population have generally been disease-specific rather than patient-centered. Tools are needed for family doctors and other primary care team members to enable them to provide patient-centered chronic care management of older patients with late-life depression and other chronic medical conditions.

Objectives

We adopted the integrated knowledge translation approach, which involves engaging and integrating “knowledge users” into the research process to: 1) shape the research questions, 2) interpret study findings and craft dissemination messages around them, and 3) move the results of the research into practice. Knowledge user partners for our project consist of family physicians, allied health clinicians, health care planners, psychiatrists as well as other stakeholders (e.g. advocacy groups, research groups) who are interested in or are already implementing new evidence-based collaborative, chronic care models for the management of late-life depression in their settings, and those implementing other chronic disease management programs in this age group (e.g., for congestive heart failure, chronic obstructive pulmonary disease, and diabetes). Several team researchers also function as front-line clinicians and knowledge users.

The specific objectives of this project were:

1. To identify the barriers and facilitators to the implementation of chronic care intervention models for late-life depression in different Canadian primary care settings.
2. Based on (1), to develop a prioritized list of feasible implementation strategies suited for different primary care settings.

3. To develop a partnership of researchers and knowledge users to prepare a research grant proposal to evaluate selected implementation strategies.

Methods

This project was conducted in 3 phases: 1) development of a prioritized list of feasible implementation strategies suited for different Canadian primary care settings; 2) feedback from additional partners; 3) preparation of a grant proposal for submission to the Canadian Institutes for Health Research (CIHR).

Phase 1 A conference was held in Montreal on December 2, 2008 in order to bring together researchers and partners to develop feasible implementation strategies. A total of 20 participants (8 researchers and 12 partners) took part in the conference. Eighteen participants attended in person and two attended via web conferencing. Four of the researchers involved on the project were not able to attend but contributed during follow-up work. Conference participants included family physicians, geriatric psychiatrists, nurses, social workers, health care administrators, as well as members of community-based mental health teams, and a community organization for seniors. Participants traveled from Ottawa, Quebec City, and London, Ontario to attend.

The conference produced a preliminary list of solutions which was sent to the partners and researchers for suggestion and comments a week after the conference. The final, edited list of solutions was then circulated to all participants, who were asked to vote on the importance and the feasibility of each of the solutions. The research team then prepared a document that classified each solution according to the 6 components of the CCM, and added some comments that summarized any evidence related to the potential effectiveness of each solution. The document was discussed with all participants. A final report summarizing this process was then circulated to all researchers and partners for additional comments. The conference discussions were also tape recorded, transcribed and analysed using qualitative methods. The themes emanating from this analysis served to ensure that the list of solutions circulated to conference participants captured the predominant barriers and solutions identified at the conference.

Phase 2 The draft report resulting from Phase 1, including the list of prioritized solutions, was sent to other interested parties across Canada. These individuals were asked to provide feedback on the clarity and completeness of the proposed solutions. Partners were also asked for specific comments concerning the feasibility of implementation of the solutions. An updated version of the report taking into account comments and feedback from these knowledge-users was then produced.

Phase 3 In January 2009, all researchers and partners who had participated in Phase 1 were invited to participate in the preparation of a grant proposal to CIHR's Partnerships for Health System Improvement (PHSI) program. This proposal will allow the team to test and evaluate the possible implementation of the retained solutions developed during the December conference.

Results

Phase 1 A list of 12 potential solutions was developed and ranked by partners and researchers attending the December conference. In keeping with the principles of integrated knowledge translation, partner rankings were used. Partners ranked as most important: increased family physician awareness of community resources, increased resources for collaborative care, and direct support of family physicians by mental health teams. The 3 solutions ranked most favourably for feasibility were: increased family physician awareness of community resources, general education on depression, and case-finding. Further discussion of these solutions among team researchers and partners took place, taking into account the research evidence supporting the potential effectiveness of different strategies. The qualitative analysis of group discussions confirmed that participants prioritized the need for providing two types of support to family physicians (1) support that would help family physicians identify available resources (listed as increased family physician awareness of community services) and (2) support that would help family physicians identify best practices in

depression management (listed as direct support to family physicians by mental health teams). In the Quebec context, the best way to achieve better linkages to resources and depression management was thought to be via a designated individual, located either in the primary care clinic (for larger group practices) or in the community health and social service centers (CSSS/CLSC), as part of the mental health team.

Phase 2 Seven of the 24 experts contacted for feedback responded within the given deadline. Most comments received echoed the issues discussed during the December conference. Some Phase 2 partners provided input on their own experiences with implementing collaborative mental health care initiatives in their local contexts. Most comments focused on the challenges that exist when moving research into practice.

Phase 3 A sub-group of interested participants from Quebec partnered with leaders from the MSSS on a letter of intent to the FRSQ. Additional people from the Douglas University Institute in Mental Health, Quebec Family Medicine Groups (FMGs) and Health and Social Service Centers (*Centres de santé et de services sociaux (CSSS)*) based mental health teams were contacted using the “snowballing” technique. Input from these new partners strengthened the research team’s proposed implementations strategies, leading to the development of a Coordination of Depression in older Adults (CoDA) model and to the submission of a grant application to CIHR’s PHSI program on April 15, 2009.

Discussion

The most feasible and potentially effective intervention strategies identified in this collaborative process related primarily to 3 components of the CCM: delivery system design (e.g., care managers/coordinators working with patients/families and family doctors, and case-finding at strategic moments such as entry into homecare); self-care (e.g., use of depression workbooks and action plans); and use of community resources (e.g., coordination of information on local community programs for family doctors). Each of these strategies needs to be further considered in the light of evidence supporting its effectiveness and potential issues in implementation.

FULL REPORT

1 BACKGROUND

1.1 The Problem

Depression in Canadian seniors is a serious problem. The prevalence of major depressive disorder in the general population aged 65 and over is at least 1 to 3%,¹ and an additional 8 to 16% have clinically significant depressive symptoms.^{1,2} Adults with depressive symptoms, with or without depressive disorder, have poor functioning^{3,4} comparable to or worse than that of chronic medical conditions such as heart and lung disease, arthritis, hypertension and diabetes.⁵ Depression also increases the risk of morbidity⁵ and mortality,^{6,7} functional decline,⁸ utilization of medical services,⁹⁻¹² and health care costs.^{13,14} Moreover, the course of depression in this population is chronic and relapsing.¹⁵

Demographic transitions in the Canadian population have increased the magnitude of the health and economic impact of late-life depression. Cancer, hypertension, diabetes, cardiovascular disease, chronic obstructive pulmonary disease, and mood disorders have been identified by the Health Council of Canada as the most frequent chronic illnesses with a high impact on the healthcare system. The prevalence of these illnesses increases markedly with age; 71% at age 60+; many having multiple illnesses.¹⁶ The frequency of health services utilization increases with the number of illnesses: the 33% of Canadians with one or more of these illnesses account for approximately 51% of family doctor consultations, 55% of specialist consultations, 66% of nursing consultations, and 72% of nights spent in a hospital.¹⁶ Among adults with chronic physical illnesses in both the US and Canada, the presence of depression doubles the rates of use of emergency departments and medical inpatient hospital services, even after adjustment for sociodemographic variables and disease severity.^{17,18} The presence of depression also threatens the ability of older adults to function independently,¹⁸ and increases their risk of mortality. Depression in medically ill older adults is also associated with prolonged mental health impairment among their family caregivers¹⁹, and increased time spent by these caregivers on emotional support and other non-physical aspects of caregiving, potentially reducing their ability to support the patient in managing their chronic physical illnesses and leading to need for increased support and even institutionalization. Thus, the potential economic impact of improving the management of late-life depression is substantial and warrants special attention.

Effective therapies for late-life depression include cognitive-behavioural therapies and antidepressant medications, as described in recent Canadian and other guidelines.²⁰⁻²³ Despite the apparent effectiveness of antidepressant and psychosocial treatments in this population, depression is recognized by non-psychiatric physicians in only about 1/3 of cases,²⁴ and the majority of depressed seniors remain untreated or undertreated.²⁵ Less than a third of Canadian seniors with major depression use health services for mental health problems,²⁶ and those that do use health services are more likely to receive treatment for anxiety and insomnia than for depression.²⁷ Importantly, even if acute phase treatment and patient compliance are optimized, as in well-conducted trials of state-of-the-art collaborative care models in the US,²⁸ the rate of improvement at 12 months reaches only 43-52%, the rate of recovery 25-40%. Even if this acute phase treatment is effective, the chances of relapse and recurrence are high. Hence, the minority of seniors that do benefit modestly from acute phase treatment are likely to have even more modest, if any, long-term benefits.²⁹ These findings lead to the need for proactive chronic care management of depression in older people.³⁰

1.2 The Chronic Care Model

A growing body of research suggests that a chronic care model (CCM) may provide the most effective means of delivering therapies for chronic health conditions such as depression.³¹ The CCM

provides a framework to improve the management and outcomes of chronic conditions through strategies to inform and empower patients (e.g., through guided self-care and creation of a supportive environment) and to prepare practice teams to play a proactive role (e.g., using redesigned delivery systems, interdisciplinary teams, clinical information systems, and strong community links).³² Interventions guided by the CCM have been associated with marked improvements in the processes and outcomes of care of many chronic illnesses, including depression.³³ A review of 102 CCM studies for various chronic conditions found that: provider education, feedback, and reminders were associated with improved provider adherence to guidelines and improved patient disease control; patient education and reminders were associated with improved patient disease control.³⁴

A compilation of applications of the CCM in Canadian primary care settings noted various challenges to implementation, including: leadership of interdisciplinary teams, targeting criteria, adaptation of interventions for single chronic conditions to address comorbidity, and providing protected time for interdisciplinary communication.³⁵ In Quebec, fee-for-service payments, lack of computerized patient information systems, and lack of remuneration for multidisciplinary practice were considered among the most important barriers to implementation.³⁶ Conversely, factors that can facilitate implementation include some of the emerging primary care delivery models (family medicine groups, network clinics), linkage of community health centers (CLSCs) to hospitals within the CSSS system, and the identification of chronic disease management as a public health priority.³⁶

1.3 Application of the Chronic Care Model to Late-Life Depression

To date, there are no studies of the application of full CCM to depression. However, a systematic review of 36 studies of collaborative care interventions for depression in adults in primary care that incorporated many elements of CCM (e.g. educational and organizational elements) found that strategies effective in improving patient outcomes generally were multifaceted and incorporated patient education, case management, and psychiatric collaboration.³⁷ Simple guideline implementation and education were generally ineffective.³⁸ A meta-analysis of 37 randomized trials published by 2004 that compared such interventions to usual care found improved patient outcomes for up to 5 years.³⁹ Effectiveness was related in part to the use of care managers with a mental health background, and receiving regular supervision.³⁹

To date, only 3 studies have been limited to those aged 60 and over, all of which were conducted in the US.^{28,40,41} These studies targeted patients with major depression (IMPACT, PROSPECT) and/or minor depression (IMPACT, PEARLS). All studies compared collaborative care delivered by a nurse, social worker, or psychologist to usual care. The intervention comprised antidepressants and/or short problem-solving therapy (PST),²⁸ psychotherapy,⁴⁰ or a home-based detection and management program that included PST.⁴¹ At 12 months, these interventions significantly reduced depressive symptoms, increased rates of depression treatment, and had other beneficial outcomes. A pilot study conducted in Montreal family practices by members of our team (Project DIRECT) found that a short-term intervention similar to the IMPACT model was feasible and acceptable to physicians and patients.⁴²

2 RATIONALE AND OBJECTIVES

2.1 Rationale

Although these promising CCM and collaborative care approaches to the care of seniors with depression in primary care settings have the potential to improve management, there remains a gap between the mounting evidence for the effectiveness of these approaches and their implementation into day-to-day clinical practice.⁴³ Furthermore, the barriers to implementation of these interventions among seniors (who frequently suffer from medical comorbidity, physical disability, cognitive and sensory impairments) have seldom been explicitly examined.

We adopted the integrated knowledge translation approach, which involves engaging and integrating “knowledge users” into the research process to: 1) shape the research questions, 2) interpret study findings and craft dissemination messages around them, and 3) move the results of the research into practice.⁴⁴ Knowledge user partners for our project consist of family physicians, allied health clinicians, health care planners, psychiatrists as well as other stakeholders (e.g. advocacy groups, research groups) who are interested in or are already implementing new evidence-based collaborative, chronic care models for the management of late-life depression in their settings, and those implementing other chronic disease management programs in this age group (e.g., for congestive heart failure, chronic obstructive pulmonary disease, and diabetes). Several team researchers also function as front-line clinicians and knowledge users.

Our intention with integrating knowledge users into our research process from the beginning was to develop and conduct a problem-based study that would generate knowledge on the process of implementation of such care models across Canada. Thus, the project would be informed by and generate knowledge of the actual barriers/facilitators to implementation of care management interventions for late-life depression in primary care. This particular project represents the first step of the process: the development of a partnership to jointly explore the problem and potential implementation strategies, and to frame the research questions.

2.2 Specific Objectives

1. To identify the barriers and facilitators to the implementation of chronic care intervention models for late-life depression in different Canadian primary care settings.
2. Based on (1), to develop a prioritized list of feasible implementation strategies suited for different primary care settings.
3. To develop a partnership of researchers and knowledge users to prepare a research grant proposal to evaluate selected implementation strategies.

3. METHODS

This project was conducted in 3 phases. In phase 1, a conference brought together researchers and decision-making partners from Quebec and Ontario to develop a prioritized list of feasible implementation strategies suited for different Canadian primary care settings. In phase 2, a report describing the process and outcomes of the conference was circulated to other partners, including those from other provinces and representing national organizations. In phase 3, a grant proposal was prepared for submission to the PHSI program of the CIHR.

3.1 Phase 1

As part of phase 1, a conference was held on December 2, 2008 in order to bring together researchers and partners to brainstorm feasible implementation strategies. Through our previous work we had established a firm base of partners who were interested in the implementation of programs for the management of late-life depression in older adults. Our existing base of knowledge users was asked for suggestions as to additional partners who might be interested in this project. Through this method we contacted an additional 10 partners. A total of 20 participants (8 researchers and 12 partners) took part in the conference. Eighteen participants attended in person and two attended via web conferencing, with 4 of the researchers not being able to participate due to other commitments on December 2nd. Conference participants included family physicians, geriatric psychiatrists, nurses, social workers, health care administrators, as well as members of community-based mental health teams, and a community organization for seniors. Participants traveled from Ottawa, Quebec City, and London, Ontario to attend.

The conference program was composed of a combination of plenary sessions and small group sessions where participants brainstormed on barriers and facilitators to the implementation of

the Chronic Care Model. We chose to structure the day using the Nominal Group Technique,⁴⁵ as a means to arrive at a list of solutions that would include everyone's input.

The two primary objectives of the conference were:

1. To identify the barriers and facilitators to the implementation of chronic care intervention models for late-life depression in different Canadian primary care settings.
2. Based on (1), to develop a prioritized list of feasible implementation strategies suited for different primary care settings.

Because the conference included unilingual (French or English) as well as bilingual participants, all materials before during and after the conference were prepared in both languages, and small group sessions involved individuals with compatible language capabilities. Before the conference, participants were sent some optional readings. The conference included plenary sessions and 3 small group break-out morning sessions for a 2 hour structured, facilitated discussion of the barriers and facilitators of the following three aspects of the CCM:

- 1) Identifying depressed older patients and implementing treatment guidelines.
- 2) Implementing supported self-management interventions.
- 3) Collaboration between primary care clinicians and mental health clinicians.

The purpose of the afternoon plenary session was to discuss the implementation strategies that had been brainstormed in the morning session and to conduct an initial vote on the implementation strategies. However, our plan to conduct the preliminary vote proved overambitious as participants wanted time to process the abundance of information from the day, before voting on their preferred implementation strategy. As a result, the day ended with a summary and discussion of next steps.

The conference produced a preliminary list of solutions which was sent to the partners and researchers for suggestion and comments a week after the conference. The final, edited list of solutions was then circulated to all participants to vote on. They were asked to vote on the importance and the feasibility of each of the twelve solutions. The research team then prepared a document that classified each solution according to the 6 components of the CCM, and added some comments that summarized any evidence related to the potential effectiveness of each solution. This document was discussed with conference participants at 2 teleconferences held on February 3 and 19, and revised accordingly. A final report summarizing this process was circulated to all researchers and partners for additional comments.

3.2 Phase 2

The draft report resulting from Phase 1 was then sent to a total of 24 experts around the country, including medical and social services professionals, some with key positions in national mental health organizations, from British Columbia, Alberta, Ontario and Quebec. These knowledge users represented regional perspectives that may not have been captured during discussions held in December. They included individuals who were either already in the research team's network of contacts (established through previous work), individuals suggested by conference participants as well as experts invited to the conference who could not attend. They were invited to offer feedback on the feasibility, potential effectiveness of and evidence supporting the proposed solutions by completing and returning a brief questionnaire. Phase 2 partners were also given the opportunity to respond by telephone with the project coordinator. Partners were asked to vote on the importance and feasibility of the proposed solutions in the same way that Phase 1 participants did. They were contacted in late April, 2009 and asked to provide feedback by late May.

The recommended solutions were also presented at a workshop at the Conference on Collaborative Care, in Hamilton, Ontario (May 31, 2009). Feedback was received from 13 participants who represented primary care and mental health professionals from across Canada.

3.3 Phase 3

In January 2009, all researchers and partners who had participated in Phase 1 were invited to participate in the preparation of a grant proposal to the CIHR PHSI (Partnerships for Health System Improvement) program. Most of the phase 1 partners expressed interest in joining this grant application; however partners and researchers decided that the PHSI application should come from Québec team members because conditions for co-funding from the FRSQ required funds to stay in Québec. Similar funding could not be obtained by the Ontario members of the team but Ontario members remained involved and informed despite this.

4 RESULTS

4.1 Phase 1

The original list of 12 potential solutions developed as a result of the December conference is shown in Table 1. Each general strategy is accompanied by examples and suggestions of how it might be implemented. 11 partners and 5 researchers then ranked the 12 solutions according to their importance and feasibility (Table 2). Not all researchers wanted to vote (7 abstained), preferring to leave the onus on decision-making partners who attended the conference. Only one of the latter abstained from voting due to lack of time. There was poor agreement among researchers and partners in the ranking of importance (Spearman correlation coefficient 0.14). Some concern was raised as to the dichotomizing of project participants along the lines of researchers and decision-making partners: this division may not have perfectly reflected the diversity of expertise and experience represented on the team. Still, both partners and researchers ranked solutions 2 (increased resources) and 9 (direct support) among the 3 most important. In contrast, partners ranked solution 1 (increasing awareness of community resources) as the most important, whereas researchers ranked solution #8 (integration of community resources) as the second most important, again reflecting the difference in expectations. The feasibility rankings of partners and researchers however were highly correlated (Spearman correlation coefficient 0.74). Both researchers and partners ranked solutions #7 (education), 6 (recovery and self-care), 1 (awareness of community resources), and 12 (case-finding) most highly. In the end, and in the spirit of participatory research, only rankings from the partners were taken into account. A qualitative analysis confirmed that the solutions retained were in line with the concerns discussed during the December 2nd conference.

The next step was to categorize the solutions according to the 6 CCM components: healthcare organization, community resources, delivery system design, self-management support, decision support and information systems.³¹ At this stage, specific examples of the solution were used (Table 3). In some cases, different implementation strategies within the same solution were classified under different CCM components. For example, within solution #1, providing information on community resources was classified under community resources, whereas providing depression treatment guidelines was classified under delivery system design. Researchers and partners provided comments on the likely effectiveness and potential issues in implementing each of these specific strategies.

The qualitative analysis of group discussions confirmed that participants prioritized the need for providing two types of support to family physicians: (1) support that would help family physicians identify available resources (listed as increased family physician awareness of community services); and (2) support that would help family physicians identify best practices in depression management (listed as direct support to family physicians by mental health teams).

4.2 Phase 2

Seven Phase 2 partners were able to provide written feedback within the requested timeframe. Comments received during this phase reinforced the themes developed during Phase 1, highlighted some topics that had been relatively neglected, and provided local examples of successful

initiatives. Phase 2 partners highlighted the importance of strategic case finding, care management/coordination, and accessing community resources.

Case-finding One partner advocated the use of validated tools for screening and monitoring patients with chronic disease (using the PHQ-2 and PHQ-9) (see Section 5.2). Another partner highlighted the role that not-for-profit volunteer organizations may play in strategic case finding, suggesting that broader targets (not just primary care clinics and doctors) would be beneficial. This idea was also brought up by another partner who discussed an outreach program that offers training to “community liaisons” (bank tellers, building superintendents, postal carriers, pharmacists) who may come into contact with seniors at risk so that they may provide assistance in accessing mental health services. It was also pointed out that cases which present in primary care are often not major affective disorders but mood disturbances and that these must also be included in strategic case finding. Feedback from participants at the Conference on Collaborative Care, in Hamilton, Ontario also stressed the importance of creative approaches to screening.

Care management/coordination Partners gave examples of local experiences with care management models. In Vancouver Island, BC, work has been done to evaluate the effect of a “systems’ navigator” for patients with mental health concerns. The navigator is a social worker who provides low threshold access, assessment and collaborative service planning to effectively link a client to the appropriate service. A separate example details a Montreal Health and Social Service Centre’s plans to link the local mental health team with community physicians to facilitate interaction between the two. Centre administrators will meet with community family physicians to provide information on services offered by the centre’s mental health team, mechanisms to access these services and possible support available from the local “*psychiatre répondant*”. In Kingston, Ontario, a speciality mood case management system involves a care manager who is embedded in and works with the family health teams. Both nursing and social work experience appear critical to this role. In addition to the service itself, organizational and leadership training and development are required to foster changes in policies and practices. Further examples can be found in the collaborative care manual developed by the Canadian Collaborative Mental Health Initiative.⁴⁶

Community resources A better understanding of, and collaboration with, community resources was highlighted by both Phase 2 partners and Collaborative Care Conference participants. Volunteer organizations may, as already mentioned, have a role in case-finding. National organisations, like the Coalition for Seniors’ Mental Health and the Canadian Geriatric Society, can provide valuable resources to facilitate primary care management of depression in seniors.⁴⁷ In British Columbia, the Vancouver Island Health Authority has implemented the CHARD computerized database of mental health resources that is searchable by family doctors.

Information systems Partners discussed building registries that would not only make mental health care information and resources more easily accessible for all parties needing them, but also potentially make it easier to track and follow-up with patients.

Other issues One partner raised the concern that the solutions were too narrowly focused on medical practitioners. The role of the network of health care services to older adults should also be considered (e.g., community interdisciplinary teams, outpatient clinics, nurse practitioners, home support workers), as should that of family members. Another partner stressed the importance of placing the family health team or family practice at the centre and identifying these team members’ needs as the initial steps to move forward with better collaborative mental health practice. Other feedback emphasized the complexity of late-life depression in primary care (comorbidity, heterogeneity) which tends to make care more difficult for family doctors. Health literacy barriers may also complicate care: available support materials are often not age specific, making self-care more difficult for older patients and making obtaining feedback from patients more challenging. Seniors may also have more difficulty travelling and so might not be able to seek out support programs or care. One partner recommended a review of the organisational change literature to help drive meaningful change into practice.^{48, 49} This partner recommended gathering information on the

“lived experience” and other practice-based evidence, in addition to traditional evidence, in developing implementation plans.

4.3 Phase 3

Five of the original researchers and 2 of the Phase 1 continued to collaborate on the development of an application to the PHSI program. This program offered funding over 3 years for up to \$500,000, with at least 30% of the total costs provided by partner contributions, either cash or in-kind. Quebec applicants had the opportunity to apply through a Letter of Intent (LOI) for up to \$80,000 in contributions, under condition that the funds should stay in Quebec. After discussion with our Ontario researchers and partners, the Quebec members of the team decided to submit an LOI (January 30, 2009). The Director of the Mental Health program at the Quebec Ministry of Health and Social Services (MSSS), agreed to act as primary decision-maker applicant for this LOI. He also obtained the support of the provincial directors of integrated primary care services and services for seniors with loss of autonomy for this application.

Following submission of the LOI, both Quebec and Ontario team members pursued other potential partnerships. At the suggestion of MSSS partners, the mental health committee of the McGill Réseau Universitaire Intégré de Santé (RUIS) was approached and agreed to partner with our team. Additional partners from the Douglas University Institute in Mental Health, Quebec Family Medicine Groups (FMGs) and Health and Social Service Centers (*Centres de santé et de services sociaux (CSSS)*) based mental health teams were contacted using the “snowballing” technique. Input from these new partners resulted in the following strategic decisions:

- 1) the project should not increase the burden on family physicians, but should provide them with tools to allow them to manage late-life depression more effectively;
- 2) FMGs should be the entry point of the proposed interventions, because this model of family medicine is being adopted across Canada as a way of addressing continuity of care issues;
- 3) the role of the nurses in FMGs needs better definition;
- 4) FMG nurses should be linked to a specific member of the CSSS-based mental health team for support in managing selected patients; and
- 5) the mental health sub-committee of the McGill RUIS would assist with the training of FMG staff by drawing upon their pool of experts.

5 DISCUSSION

This report describes the development of partnerships between researchers and knowledge users to jointly suggest strategies for improving the management of late-life depression in Canadian primary care settings. In this section, we discuss: 1) the strengths and limitations of the approach we used; 2) the intervention strategies prioritized by this process; and 3) some general principles that can guide the successful implementation of these strategies.

5.1 Strengths and limitations of the approach

In this project, we adopted an integrated knowledge translation approach, which involves engaging and integrating “knowledge users” into the research process to: 1) shape the research questions, 2) interpret study findings and craft dissemination messages around them, and 3) move the results of the research into practice.⁴⁴ Although this approach has been proposed as a way to increase the successful implementation, there is limited experience with it to date. A limitation of our approach is the restriction of participants in Phase 1 to two Canadian provinces (Quebec and Ontario). The feedback obtained in Phase 2 from British Columbia and from other locations in Ontario and Quebec helps to broaden the perspective, but the results may still not be fully representative of other provinces and locations.

5.2 Intervention strategies

The most feasible and potentially effective intervention strategies identified in this collaborative process related to 3 components of the CCM: delivery system design (e.g., care managers/coordinators working with patients/families and family doctors, and case-finding at strategic moments such as entry into homecare); self-care (e.g., use of depression workbooks and action plans); and use of community resources (e.g., coordination of information on local community programs for family doctors).

Care management/coordination

All of the effective interventions for late-life depression published to date have used a care manager – a nurse, social worker or psychologist, usually with mental health experience - who received supervision from a psychiatrist and ultimately acted as an adjunct to care offered by the family physician. The results of our pilot study (Project DIRECT) suggested that a telephone-based care management intervention would be acceptable to most patients and physicians,⁴² making this a more feasible option for solo or small group practices, including those in rural areas.

Emerging primary care models such as family medicine groups in Quebec and similar groups elsewhere in Canada have nurses who could be trained to fill this role. These individuals could be linked to mental health resource people. Similarly, in home care programs, the case manager could be trained to manage depression. Consideration should be given to centralized care management, perhaps by telephone, to assist family doctors who lack the resources to assist with care management.

Targeting of care management interventions has received little attention. Not all depressed seniors will require a care manager; limited resources dictate that only those patients with more complex care needs can be referred to care managers. Those with less complex needs might require a greater emphasis on self-management and access to a care navigator. The Kaiser Population Health Risk Pyramid⁵⁰ may provide a useful framework for linking interventions to patients with different severity levels. The coordination of depression care management for the majority of seniors who have comorbid chronic physical illnesses is another challenge. Treatment guidelines are typically designed for individuals with a single disease, and may pose risks of polypharmacy and other adverse effects when applied to seniors with multimorbidity.^{51, 52}

Case-finding

An effective case-finding intervention for late-life depression requires use of an efficient screening tool for depression and follow-up with an effective treatment or other intervention. Short screening tools to detect depression have been validated and are recommended for use in clinical practice.⁵³⁻⁵⁵ The Patient Health Questionnaire-9 (PHQ-9), based on the 9 diagnostic criteria for major depressive disorder in the DSM-IV, is derived directly from the PRIME-MD.⁵⁶ It has demonstrated very good sensitivity, excellent specificity, and good inter-rater reliability.⁵⁷ The 2 question PHQ-2, derived from the core diagnostic criteria in the PHQ-9, appears to perform almost equally well.⁵⁸⁻⁶⁰ However, one recent study of an older, medically-ill primary care sample found that the summed PHQ-9 score is a better screening tool than the PHQ-2, because of the tendency of some patients not to report the core depression symptoms comprising the PHQ-2.⁶¹ Several methods of using these case-finding tools have been reported. Mailing the PHQ-2 screening tool (with telephone screening for non-responders) was found to be an efficient method in one study.⁶² In the Project DIRECT pilot study, we found waiting-room self-screening with the PHQ-2 to be more feasible and efficient than screening by doctors.⁴² Most of the evidence relates to case-finding in primary care; little work has explored other settings (e.g., emergency departments, entry into home care, during hospitalization), and the few studies conducted have found minimal to no impact on subsequent management.⁶³

Self-care

Guided self-care interventions for depression use written information, audiotapes, videotapes, computerized materials, or group courses to assist patients in the management of their

depressive symptoms.⁶⁴ In Quebec, self-care interventions are being considered by the Mental Health program of the MSSS as step 1 in a stepped care program for treating depression in primary care, similar to that in the UK.⁵³ Recommendations notwithstanding, there has been surprisingly little research into the effectiveness of guided self-care of depression either as the primary modality of treatment in clinical settings or in medically ill seniors, or into the patient characteristics (e.g. severity of depression) that predict the successful use of these interventions.⁶⁴ Meta-analyses suggest that interventions that involve at least minimal clinician contact are more effective than those with no such contact.⁶⁵

Action plans are another patient-centered approach to self-care, that allow patients to select goals that are consistent with their physical and emotional needs and priorities. Action plans have proved effective in managing chronic physical conditions⁶⁶ but there is no evidence that they are effective in depression.

Examples of such materials include workbooks developed in Canada for depression self-care, for example the depression self-care manual, tested for acceptability in British Columbia,⁶⁷ or the more recent Positive Coping with Health Conditions (developed specifically for patients with depression and chronic medical problems).⁶⁸

Community resources

Although information alone is not enough to change management, provision of information on local community resources to care managers, with specific referral pathways, may be a useful adjunctive intervention to help patients with self care (for example, referral to exercise programs.)

5.3 Implementation

Feedback from partners at all phases of this project underlined the challenges involved in moving evidence-based recommendations into practice. The Ottawa Model of Research Use^{69,70} provides a framework for planning, implementing, monitoring, adapting, and evaluating interventions in health care settings.⁷¹ According to the Ottawa model, implementation of any evidence-based intervention should engage all potential adopters in a collaborative process that considers and addresses the local barriers and facilitators to implementation. This requirement was instrumental in guiding the selection of our study's partners; i.e. those who will ultimately adopt the proposed interventions.

As this research initiative moves forward, it will be important to consider the systems design, organizational change and performance improvement literature to facilitate driving meaningful change into practice.^{48,49} Once implementation has been initiated, the Ottawa model stresses the importance of 1) documenting how the intervention is being delivered, 2) identifying unanticipated barriers to implementation, 3) adapting the intervention to address these barriers, and 3) evaluating the intervention's impact on patients, health professionals, and health systems. The research questions and methods of evaluation proposed in the application to the PHSI program submitted in April 2009 are guided by these latter elements of the Ottawa framework.

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Table 1: List of Solutions Developed by Participants during Phase 1

<p>1. Mechanisms should be developed by which family physicians are made aware of what services/programs are available in the community to help them to manage their older patients with depression and provide supportive care/aftercare (e.g. fitness classes, support groups). This solution does not necessarily include direct support of the family physician by mental health professionals (see #9).</p> <p>Could be achieved through:</p> <p>a) A designated health professional (e.g social worker or nurse) within primary care who:</p> <ul style="list-style-type: none">(1) Is educated on other health and psychosocial issues related to aging;(2) Acts as a liaison between the family doctor and other professionals/ community organizations;(3) Bring best practice information to the family doctors (e.g. treatment algorithms). <p>b) Region specific fact sheets and promotional materials for family physicians on specific publicly and privately-run community resources for depressed seniors.</p>
<p>2. Monetary and human resources should be allocated by government health authorities to make collaborative care of depression in seniors easier for health providers to engage in on a regular basis.</p> <p>Could be achieved through:</p> <p>a) Increasing positions to train and retain family doctors;</p> <p>b) Geriatric psychiatrists should be required to designate a specific amount of their practice time uniquely to psychiatric consultation;</p> <p>c) General psychiatrists should be required to designate a specific amount of their practice time uniquely to psychiatric consultation and care of the elderly;</p> <p>d) Provide alternative funding (e.g. sessional or hourly rates) for family physicians and psychiatrists to be able to communicate on case discussions.</p>
<p>3. Professional training should be supplied to health care providers from different disciplines to learn how to engage in and maintain interdisciplinary and interprofessional collaboration in mental health care.</p> <p>a) Need to look at the potential and/or value of interdisciplinary learning; changes in curriculum.</p>
<p>4. A framework for new pathway(s) to access depression care services in non-stigmatized and non-clinical settings should be developed, which would allow patients and caregivers to access services for depression from many settings including: primary care provider, specialist, and community organizations.</p> <p>a) The nature of the presenting problem might dictate from which type of health professional care is obtained.</p>
<p>5. There should be increased lobbying efforts (by professionals, the public at large, and advocacy groups) to ensure that mental health funding is secured for primary care and community-based services.</p>

<p>6. Recovery should be seen as both a process and a goal for management of depression in seniors, which functions to motivate patients, coach and support them in their self-care efforts, and reframes treatment from “getting better” to “working towards a better life.”</p> <p>Could be achieved through:</p> <ul style="list-style-type: none"> a) Producing a mutually-agreed upon goal-setting card that patient brings to appointments; b) Self management workbooks and other educational materials; c) Patient-centered services delivered by an integrated network of care providers (e.g. medical, nursing, social work, nutritional, and recreational) based both in primary care settings and community organizations.
<p>7. General education on depression (e.g. stigma, risk factors) and the types of services available to manage depression (e.g. community resources) should be supplied to providers, older adults and the general population (especially those who may come into contact with older adults).</p> <p>Could be achieved through:</p> <ul style="list-style-type: none"> a) Local health authorities, mental health teams could provide educational material for providers, patients, and the general population who come in contact with older adults (e.g. hairdressers, bank tellers); b) Provided in diverse media and different languages; c) Should include information on stigma; d) Participate in anti-stigma campaign spearheaded by the Kirby Commission on Mental Health.
<p>8. Community-based resources, including peer-support, should be designed or enhanced to support seniors with depression and their families, to work in tandem with hospital/clinic-based mental health services.</p> <p>Could be achieved through:</p> <ul style="list-style-type: none"> a) Organized system for peer support (e.g. Canadian Mental Health Association)
<p>9. Mechanisms for direct support of family physicians by mental health teams in managing depressed patients should be provided. This goes beyond informing family physicians about resources available (as in #1), and provides direct, collaborative support on management of specific patients.</p> <p>Could be achieved through:</p> <ul style="list-style-type: none"> a) Mobile mental health intervention teams (specialized psychiatric nurses, social workers, and case managers); b) Designated on-call telephone consultation by psychiatrists; c) Consulting psychiatrist ; d) Onsite psychiatrist/psychologist; e) Geriatric psychiatric consultation via telemedicine.
<p>10. There should be improved coordination of care and flow of information between family/patient and family physician/care teams.</p> <p>This might be achieved by a designated professional (e.g., case manager, social worker infirmière pivot/liaison nurse) who could:</p> <ul style="list-style-type: none"> a) Facilitate improved pre/post consultation care; b) Support self-management; c) Make reminder calls to patient; d) Involve the family; e) Provide pro-active and creative follow-up (e.g., postcards) to patient and their support network; g) Schedule regular medical and other pertinent appointments to focus on depression.

11. Computerized information system(s) should be implemented to allow the family physician and other health professionals to coordinate information between hospitals, physicians' offices, care teams, in order to increase the informational continuity of care, and to monitor patient treatment and follow-up.

This might include:

- a) Centralized database accessible by health professionals
- b) Electronic patient medical records

12. Case-finding strategies to identify depressed seniors should be implemented at strategic moments (e.g., when patient makes ER visit, is hospitalized, when clinical condition deteriorates, when patient is assessed for homecare services).

Could be achieved through:

- a) Brief self administered questionnaire in waiting room of physician's office to open up conversation about depression
- b) Use of specific screening and assessment tools at appropriate times.

Table 2: Final list of solutions with ranking of importance and feasibility based on votes from 5 researchers, 11 Phase 1 partners, and 7 Phase 2 partners

	Ranked Mean Importance Researchers n=5	Ranked Mean Importance Phase 1 Partners n=11	Ranked Mean Importance Phase 2 Partners n=7	Ranked Mean Feasibility Researchers n=5	Ranked Mean Feasibility Phase 1 Partners n=11	Ranked Mean Feasibility Phase 2 Partners n=7
1. Mechanisms should be developed by which family physicians are made aware of what services/programs are available in the community to help them to manage their older patients with depression and provide supportive care/aftercare (e.g. fitness classes, support groups). This solution does not necessarily include direct support of the family physician by mental health professionals (see #9).	8	1	2	4	1	2
2. Monetary and human resources should be allocated by government health authorities to make collaborative care of depression in seniors easier for health providers to engage in on a regular basis.	3	2	8	12	11	11
3. Professional training should be supplied to health care providers from different disciplines to learn how to engage in and maintain interdisciplinary and interprofessional collaboration in mental health care.	8	11	9	6	10	8
4. A framework for new pathway(s) to access depression care services in non-stigmatized and non-clinical settings should be developed, which would allow patients and caregivers to access services for depression from many settings including: primary care provider, specialist, and community organizations.	4	8	7	10	7	9
5. There should be increased lobbying efforts (by professionals, the public at large, and advocacy groups) to ensure that mental health funding is secured for primary care and community-based services.	12	4	11	9	9	10
6. Recovery should be seen as both a process and a goal for management of depression in seniors, which functions to motivate patients, coach and support them in their self-care efforts, and reframes treatment from “getting better” to “working towards a better life.”	6	10	11	1	4	3
7. General education on depression (e.g. stigma, risk factors) and the types of services available to manage depression (e.g. community resources) should be supplied to providers, older adults and the general population (especially those who may come into contact with older adults).	11	7	3	2	2	1
8. Community-based resources, including peer-support, should be designed or enhanced to support seniors with depression and their families to work in tandem with hospital/clinic-based mental health services.	2	9	7	8	6	6
9. Mechanisms for direct support of family physicians by mental health teams in managing depressed patients should be provided. This goes beyond informing family physicians about resources available (as in #1), and provides direct, collaborative support on management of specific patients.	1	3	1	4	8	4
10. There should be improved coordination of care and flow of information between family/patient and family physician/care teams.	5	5	5	7	5	6
11. Computerized information system(s) should be implemented to allow the family physician and other health professionals to coordinate information between hospitals, physicians' offices, care teams, in order to increase the informational continuity of care, and to monitor patient treatment and follow-up.	9	12	12	11	12	12
12. Case-finding strategies to identify depressed seniors should be implemented at strategic moments (e.g., when patient makes ER visit, is hospitalized, when clinical condition deteriorates, when patient is assessed for homecare services).	10	6	5	5	3	8

Table 3: Solutions devised during the conference on the Management of Late-Life Depression in Primary Care linked to the 6 components of Chronic Care Model, with comments on potential effectiveness.

Components of the Chronic Care Model	Phase 1 partners' ranked importance n=11	Phase 1 partners' ranked feasibility n=11	Possible Intervention (# of this intervention on original Dec. 2nd list, for reference)	Comments/Evidence
HEALTH CARE ORGANIZATION	2	11	Training and retention of FPs (#2)	Essential if FPs are the main primary care providers. Current shortage of FPs.
			Geriatric psychiatrists should have designated time for consultation (#2)	A problem in some non-hospital settings. General psychiatrists should probably be included.
			Alternate funding methods (e.g., sessional, hourly) for FPs and psychiatrists (#2)	Financial incentives are important drivers of FP and psychiatrist behavior.
	4	9	Lobbying for increased mental health funding (#5)	Evidence of effectiveness is very important.
DELIVERY SYSTEM DESIGN	8	7	Varied access pathways, including primary care, speciality care, community organizations (#4)	Little evidence of effective interventions in speciality care settings (i.e., for depressed seniors with a comorbid chronic physical condition, whose primary physician is a medical specialist). Some effective interventions have been delivered through community organizations in collaboration with mental health teams (e.g., in residential care, homecare).
	6	3	Case-finding at strategic moments (e.g., ER, admission to or discharge from hospital, homecare entry) (#12)	Case-finding (including liaison with FP) alone does not change treatment or outcomes, unless linked with care management. Research on feasibility of these innovative entry points may be worthwhile.
	5	5	Care coordination (e.g., case manager) (#10)	Component of most effective interventions.
	11	10	Training professionals for interdisciplinary practice (#3)	Limited evidence that this changes behaviour.
	3	8	Direct collaborative support of FP by mental health team (e.g., mobile teams, on-call consultation, on-site psychiatrist/psychologist, telemedicine) (#9)	Evidence is mixed. Collaborative support can be effective if care managers (with mental health background) involved are who are supervised by a psychiatrist.

(Continued)

Table 3 Continued

Components of the Chronic Care Model	Phase 1 partners' ranked importance n=11	Phase 1 partners' ranked feasibility n=11	Possible Intervention (# of this intervention on original Dec. 2nd list, for reference)	Comments/Evidence
COMMUNITY RESOURCES	7	2	Education (#7)	A long-term strategy; little evidence of direct effects.
	1	1	Information on local community resources to FPs (#1)	Information alone does not change management or outcomes.
	9	6	Peer support (#8)	Little evidence.
SELF-MANAGEMENT SUPPORT	10	4	Goal-setting cards/action plans (#6)	Have been developed for depression (and other chronic conditions), but not evaluated
			Self-management workbooks (#6)	Limited evidence of effectiveness for clinical populations. May be more effective if professional support or guidance provided.
			Patient-centered services (#6)	Patient-centered communication can improve treatment adherence and satisfaction.
DECISION SUPPORT	1	1	Treatment algorithms supplied to FPs (#1)	Not effective alone. Component of most effective multifaceted interventions.
	3	8	On-call psychiatric consultation (#9)	Evidence generally negative, unless part of a multifaceted intervention.
CLINICAL INFORMATION SYSTEM	12	12	Computerized information system (#11)	A computerized registry of depressed patients in a practice that includes monitoring of depressive symptoms, information on treatments and follow-up visits is an essential component of almost all effective interventions.
			Electronic patient records (#11)	Would facilitate development of registry above