Planning the implementation of change based on collaborative care model evidence for people with common mental disorders and physical long-term conditions: a case example

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Abstract

Rationale, aims and objectives: There are many challenges to implementing the collaborative care model (CCM) for people with common mental disorders and physical long-term conditions in primary care settings. There is also a knowledge gap on how to implement change based on CCM evidence. This article aim to present a case example of a process to plan the implementation of change based on CCM evidence in primary care settings. Context of the case example: The process of planning the implementation of change was conducted during a multiple case study in three family medicine groups in Quebec, Canada. The pre-implementation steps of the Grol & Wensing implementation of change model were used to design the planning process. Process to plan the implementation of change: 1) review of the literature on the CCM, engaging stakeholders, development of data collection tools; 2) familiarization with actual collaborative care process and professional activities, assessment of the quality of activities with analysis tables; 3) identification of barriers and enablers to implement change, visualization of the results, prioritization of potential strategies with an advisory committee; 4) validation of results and assessment of practices, selection and development of strategies tailored to local needs. Various data sources have been used: feedback from managers, advisory committee and local working groups, interviews (n=32), observations (n=7), documents, and schemas. Conclusion: Planning the implementation of change based on CCM evidence helped select strategies tailored to local needs that might overcome determinants of change impacting the quality of activities and the team's capacity to efficiently implement change.

Introduction

In Canada, anxiety and depressive disorders are among the top five most frequently diagnosed long-term conditions.[1] Prevalence of these common mental disorders (CMDs) is twice to three times higher among people with physical long-term conditions (LTCs), such as diabetes or cardiovascular diseases, than in the general population.[2] The occurrence of these mental and physical health conditions is associated with morbidity and disability, resulting in decreased quality of life [3,4] and increased use of health services [5,6].

The collaborative care model (CCM) for the treatment of people with depression in primary care settings, built on Wagner's Chronic Care Model, has been developed to improve quality of care.[7] The CCM involves a team of health care professionals, including a family doctor, a care manager and a mental health specialist working together based on an individualized plan developed from patient needs, preferences and evidence-based treatments.[8] This model of care has been thoroughly studied and implemented over the past 20 years across the USA[9] and in some European countries such as the Netherlands [10] or the United Kingdom.[11]

However, even though the CCM has been proven effective to improve the mental health status of a diverse clientele[12] and cost-effective compared to usual care,[13] there are still many barriers to its implementation. For example, challenges may be related to clinicians' difficulty in understanding the role of each team member, to

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the care manager's level of competency, or to the level of access to mental health resources.[14-15-16] Adapting the CCM to local needs and involving stakeholders throughout the implementation process appears important according to two systematic reviews on enablers and barriers to CCM implementation.[16-17] In general, an intervention that is defined and planned without being adapted to the organization is likely to encounter implementation difficulties, as this runs against the natural functioning of the organization.[18]

Models have been developed to guide the implementation of change in health care organizations, such as the Grol & Wensing implementation of change model.[19] This model was developed incorporating a number of theories on implementation of innovations and change such as planned-change theories and determinants of effective implementation of change.[19] It proposes seven dynamic steps that are interconnected and which can be conducted more than once depending on the context and emerging results: "1) Development of a proposal for change; 2) Analysis of actual performance; 3) Problem analysis of target group and setting; 4) Development and selection of strategies; 5) Development, testing and execution of an implementation plan; 6) Integration of changes in routine care; 7) Continuous evaluation and adaptation of the plan where necessary".[20 p.xvi]Steps one to four and part of step five (development of an implementation plan) refer to the pre-implementation phase and allow strategic planning of the change with stakeholders, i.e. people who are directly affected by the change of practice. Importantly, these steps can inform on targets for change, determinants of change, strategies to prioritize according to local needs, and resources and activities needed to implement change.[20] Emerging results can then help researchers to model change, resulting in a better idea of what to measure when assessing the effectiveness of implementation strategies on patient outcomes or quality of care.

Even though it is a crucial stage, few studies have described the process and methods used to strategically plan the implementation of change[21] and there is also little evidence available on the implementation of the CCM in primary care settings in Canada[22]. The purpose of this article is to present a case example of a process to plan the implementation of change based on CCM evidence for people with common mental disorders and physical long-term conditions in primary care settings, using the pre-implementation steps of the Grol & Wensing implementation of change model as a framework.

Context of the Case Example

The planning process described in this article was conducted during a qualitative multiple case study aiming to analyze the planning process for implementing change based on CCM evidence in family medicine groups (FMG), the principal primary care settings in health care organizations in Quebec, Canada. A FMG is a group of family doctors working in collaboration with health care professionals such as primary care nurses, social workers, pharmacists, nutritionists or psychologists. The original study was approved by *Centre intégré universitaire de santé et de services sociaux de l'Estrie-Centre hospitalier universitaire de Sherbrooke* (CIUSSS-CHUS) ethics committee.

Process to Plan the Implementation of Change Based on CCM Evidence

The planning process was designed according to the first four steps of the Grol & Wensing implementation of change model. The development of an implementation plan (step 5) is in progress within each setting, and is beyond the scope of this article. This article describes each step of the planning process by giving a description of the original steps of the Grol & Wensing model, explaining how the model was adapted, presenting the main data sources, key actors and the activities involved in the process (action), and finally, discussing the main output and lessons learned to propose improvements to the step when relevant.

Step 1. Develop a proposal for change with stakeholders

Before proposing a change to stakeholders, a literature review on the innovation to be implemented was needed to understand its characteristics.[23] The CCM (and the role of the care manager) was our evidence-based practice to improve the role of primary care nurses and collaborative care in FMGs. We identified the main characteristics of the CCM, i.e. components, professional activities or tasks involved in the CCM, factors that might influence its implementation and related outcomes.[8,16,17] A scoping review was conducted

to explore a specific aspect of the CCM: challenges of adopting the role of the care manager by primary care nurses.[14] We also identified key interventions and materials on the CCM to prepare the implementation of change.

Among seminal publications in the field, we included the first large randomized controlled trial of treatment for depression that took place in the USA: Improving Mood-Promoting Access to Collaborative Treatment (IMPACT).[24,25] Since then, IMPACT has been widely studied and adopted in many other countries, and a team of researchers at the University of Washington Advancing Integrated Mental Health Solutions (AIMS) Center developed tools to help researchers and managers implement the CCM. For instance, they created a checklist to evaluate the principles and main tasks (professional activities) of the CCM and published a full description of the care manager job.[26,27]

The review of the literature also helped to plan the methodology, such as identifying which type of participants should be recruited and it facilitated the development of data collection tools. Interview guides for each type of participant (patients, family doctors, primary care nurses, and other primary care providers) were developed to analyze actual practices and challenges to collaborative practice for people with CMDs and LTCs in FMGs. The three interview guides were respectively tested and reviewed by the research team with a patient partner, a primary care nurse and a psychiatrist not otherwise involved to the study.

To ensure feasibility of the project, we needed the collaboration and support of the Nursing Directorate at the regional hospital centre where the project was conducted. From January 2017 to September 2018, the principal investigator met with nurse managers of the Nursing Directorate twice to propose an improvement in nursing and collaborative practices for people with CMDs and LTCs in FMGs. The first meeting was to present a proposal for change based on previous studies.[28,29] The second meeting was to confirm their interest in changing practices and to identify potential FMGs that might be of interest in the study. Three FMGs were targeted.

FMGs are organizations that are distinct from the hospital centre and are led by family doctors. Thus, we contacted the family doctors responsible for targeted FMGs by e-mail, including a one-page summary of the project describing the goal, staff involvement and timeline. When family doctors manifested their interest in the study, a face-to-face meeting was organized to present the project. A total of three urban FMGs were recruited (see Table 1).

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In each FMG, health care professionals involved in the care of people with CMDs and LTCs were invited to participate in the study (e.g. nurse, family doctor, psychologist, social worker). With regard to patients, we asked recruited primary care nurses to identify one patient (adult) with at least one LTC and depression or anxiety. Identified patients were then individually contacted by a member of the research team to explain the project and obtain informed consent.

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Within each FMG (n=3), a local working group was created, including at least one primary care nurse and one family doctor. They were involved to discuss the gap in their practices as well as to select and adapt strategies. The participant recruitment process for the working group differed between FMGs as we adapted our method to local preferences and procedures. In general, leaders of the group or those who were identified as champions in mental health care by their colleagues were involved in the working group. Moreover, a

nurse manager at the regional hospital centre was also invited to attend the first meeting in each FMG. The number of participants involved in the first meeting of each working group ranged from 3 to 8 participants.

Finally, an advisory committee was created to counsel the research team on potential strategies to implement a change of practice based on the provincial and local context and to contribute to knowledge mobilization among FMGs. Members of the committee were invited based on their collaborative care expertise in primary care of people with CMDs and LTCs. This committee included 2 patient partners with a history anxiety or depression, and at least one LTC, who received primary care services for their mental and physical health problems. Other committee members included 3 researchers in the field of collaborative mental health care and nursing, 1 nurse manager, 1 family doctor, 1 primary care nurse, 1 psychiatrist, and 1 psychologist. Most of the participants were from different regions across the province of Quebec (n=4) except for one who was in another Canadian province (Ontario). However, the majority of experts (n=6) were from the region where the project took place.

In January 2019, an initial meeting with the Advisory Committee was held to share current CCM evidence and to discuss the feasibility of implementing main components of the CCM in FMGs. Throughout the process, the first author also met individually with certain members of the Advisory Committee to further address specific issues mentioned during the meeting such as primary care nurse training, the role of the psychiatrist, population-based care and mental health outcome measures.

Discussion on lessons learned. This step was beneficial to the development of a collaboration with nurse managers at regional hospital centres and with the leaders of each FMG, to initiate a reflection on the challenges to implementing the CCM in FMGs and to further our understanding of the CCM. The primary activity, which took almost a year to carry out, was to engage a variety of stakeholders in the project. In order to optimize stakeholder engagement, it is important to have a flexible agenda, to adapt communication methods to individual preferences, to simplify and synthesize scientific information as much as possible, being clear on the type of involvement and human resources needed.

Step 2. Analysis of actual practices

This step in the implementation of change model aimed to assess current care in targeted settings by identifying and using measurement indicators.[30] Indicators can be divided by structure, process or outcomes and are measurable elements that help evaluate quality of care and identify where changes are most needed.[31]

Measuring outcomes for mental health problems is a worldwide challenge[32] and Canada's health care system is no exception.[33] Compared to other fields of care, many mental health quality measures are not necessarily available in electronic medical records or manageable to use for research and quality improvement initiatives.[32] Consequently, we conducted an analysis of actual practices with qualitative data sources instead of analyzing actual performance using quality indicators.

Data sources for this step of the process were collected from recruited participants in each FMG (Table 2) through face-to-face interviews ([?] 45 to 60 minutes) and non-participatory observation of a nurse-patient encounter. We also retrieved and examined relevant documents on professional activities and collaborative care: documents on specific programs for people with LTCs or CMDs, educational materials, clinical nursing mental health assessment canvases, and health care professionals referral forms.

The data collection period lasted from December 2018 to April 2019. Interviews with primary care providers and nurses were the first data to be collected (n=25), followed by interviews with patients (n=7) and observations (n=7). Field notes were written after each interview and observation to describe first impressions and links to previous interviews/observations. The data from each FMG were separately analyzed and interviews and observations were audio-recorded and transcribed by a professional. Finally, two authors (EE, PR) also listened two to three recordings to validate whether interviews with primary care providers and nurses were capturing all elements of the practice. Analysis of actual practices was done in two main stages.

First, we documented current collaborative practices in each FMG, including nursing activities and chal-

lenges in the delivery of collaborative care to patients with CMDs and LTCs. We conducted (AG, JBH) a thematic analysis of interview transcriptions,[34] with NVivo 12.0, and then schematized results to illustrate the collaborative care process and relationships between professional activities (see Additional File 1 for an example).

Second, we assessed the level of achievement and quality of professional activities involved in the CCM using two analysis tables built from the previously mentioned AIMS Center tool.[26,27] These two tables respectively summarize the main activities of the CCM and the care manager's activities (see additionnal files 2-3). Throughout this stage, tables were updated.

For each activity, the first author identified the professional who performed the activity and how it was done, the level of achievement, the resources and competencies required as well as any barriers to carrying out the activity. Triangulation of patient interviews, observations of nurse-patient encounter and documents from each FMG were integrated to enrich the assessment of each activity. The analysis was done in an iterative way and results obtained during the quality assessment were validated with the author who conducted a thematic analysis. Finally, preliminary results were presented to all members of the research team to validate results and to make decisions about how to deal with activities that were more difficult to assess. The team decided to ask for the opinion of local working groups regarding the assessment of these activities (step 4).

Discussion on lessons learned. Analysis of actual practices using qualitative data (verbatim from observations and interviews, schemas, and documents) provides a thorough understanding of current collaborative care and how professional activities are delivered, helping to identify potential activities that could be improved (targets for change). A limitation of this approach was the amount of data to collect and to manage in a short period of time. In addition, in the context of our study, we didn't use quality indicators measuring collaborative mental health care to assess the actual performance as recommended in the Grol & Wensing model. Indeed, using quantitative data from the registry would have helped to better prioritize targets for change.

Assessing all professional activities involved in the CCM can be a time consuming challenge. The CCM includes many activities that are sometimes harder to evaluate because of their subjective nature or require specific and valid measurement tools adapted for such an analysis. For instance, patient's engagement in their care was more difficult to assess. Consequently, to measure the level of engagement of patients it may be relevant to combine qualitative data sources with a valid questionnaire. For future research, an example of a valid tool that might help to better assess patients' engagement in their care, is the *Patient Assessment of Chronic Illness Care (PACIC)*. [35] This is a validated self-reported tool to measure the extent to which patients with LTCs receive care that is congruent with Wagner's Chronic Care Model.[35] However, to be more specific in assessing satisfaction with and engagement in both mental health and physical care, it might be useful to adapt the PACIC.

Furthermore, the *Assessment of Chronic Illness Care* (ACIC) might also be a useful tool to assess the overall level of achievement and quality of professional activities.[36] The ACIC was built to help identify areas for improvement in the care of people with LTCs.[36] The ACIC covers many principles and professional activities of the "Patient-Centered Integrated Behavioral Health Care Principles & Task Checklist" developed by the AIMS Center, but lacks specificity for mental health treatment and services. For further study, it might be interesting to adapt the ACIC by combining elements of this previous version that are specific to mental health care (e.g. psychiatric consultation or psychotherapy).

Step 3. Problem analysis of the target group and setting

This step means identifying determinants of change, i.e. factors that might hinder or enable improvements, through data collection with stakeholders such as interviews or focus groups.[37] The analysis of actual practices helped begin the analysis of the problem, so we combined the main data sources (schema on the process of care, thematic analysis, analysis tables) with evidence on factors influencing the implementation of the CCM in primary care settings.[8,14,16,17]

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For each FMG, we highlighted the main factors influencing each activity of the CCM and primary care nurses. We also used analysis tables from the previous step (analysis of actual practices) and combined the results from each FMG into one table. This provided a broader picture of the problem and enabled easier visualization of targets for change. In addition, we used colour and symbols to visualize the level of achievement for each activity (see Additional File 4 for an example). Schemas on the process of care in each FMG also helped to visualize which professionals are involved in the collaborative care process and to support the analysis of the problem.

Some barriers to change were not under the control of FMGs (e.g. external factors such as mental health policies or lack of resources in mental health). For this reason, the research team needed to rigorously assess the problem with the Advisory Committee and to identify determinants that FMGs are able to impact.

Therefore, a 90-minute meeting was organized in April 2019 with the Advisory Committee to present the preliminary results from our previous analysis. The objective was to clarify the problem and to explore the types of strategies that might be appropriate to improve the role of primary care nurses and collaborative care for people with CMDs and LTCs in FMGs. Two problems were prioritized: The lack of involvement of nurses in the follow-up of CMDs and suboptimal collaboration between nurses and family doctors. This problem may be related to a misunderstanding of the role of primary care nurses in providing care to people with mental health problems or to the nurses' level of training to care for people with CMDs. Consequently, two strategies were proposed to resolve these issues: 1) Clarify the role of nurses and other members of the team in the follow-up of people with CMDs and LTCs; 2) Improve the nurses' knowledge of care for people with CMDs.

Discussion on lessons learned. Analyzing the problem was a challenging task because the CCM is a complex model involving multiple actors at different levels through a variety of activities and requires many resources (e.g. technologies, humans, treatments, services). The tools that we used facilitated understanding of the problem, especially the schemas describing the current process of care and the results from analysis tables. For example, schematization helped illustrate the complexity of delivering non-pharmacological treatments, and that nurses were not involved in the same way, at the same time in the collaborative care process in each FMG.

However, analysis tables presented to the Advisory Committee covered too many activities and did not provide a quick overview of the relationships between the professional activities included in the CCM, i.e. logical order of main professional activities involved when delivering collaborative care. Consequently, we built a schema illustrating the process of delivering collaborative care according to CCM evidence (see Schema 1). This schema can be an effective tool to rapidly illustrate the location of a problem and to share this with stakeholders. Therefore, we strongly recommend that researchers or decision makers schematize the process of care involved in the innovation to be implemented as this will represent the "gold standard" for the analysis of actual practice. This schematization can be done following a literature review at the beginning of the planning process.

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There is little evidence regarding methods that can be used to identify determinants of change and to prioritize the problem; researchers often need to use their creativity to do so.[21] This was the case in our study as we developed our own methods, but we later discovered that schematization of the process of care can be compared to a quality improvement method called "process mapping". A process map can be defined as "a diagram showing components, relationships and the sequence in which a system functions".[39] p.61 Indeed, quality improvement (QI) methods can help to analyze actual practice and prioritize the problem before implementing change. For instance, the Quality Enhancement Research Initiative (QUERI), developed by the U.S. Department of Veterans Affairs,[40] uses scientifically supported QI methods to implement evidence-

based practices. Nevertheless, QI methods may need to be adapted and tested in various types of health care organizations and for different types of research issues.

Step 4. Selection and development of strategies

This step involves selecting and developing appropriate strategies based on the most relevant determinants of change for each setting, because priorities may differ from one setting to another.[41]There is no consensus around methods to use when designing implementation strategies with stakeholders.[41]Consequently, we developed a method to involve stakeholders based on our research team's experience in working with stakeholders when implementing change (CH, PR) and expertise in pedagogy (EE).

From May to June 2019, we organized an initial meeting with local working groups in each FMG to validate results, to discuss the local problem, the strategies that professionals wanted to address and their willingness to implement a change, specifically with respect to the role of primary care nurse. Meetings were 90 minutes long and were audio-recorded to allow the researcher to keep track of relevant information as needed. A member of the research team also took notes.

First, schemas of current collaborative practices was presented to each working group for validation and modifications were suggested in each setting. This step helped to update our understanding of current practices in each FMG to take into account any clinical changes that occured since the end of the data collection period. Groups were invited to identify where they thought their practice might be improved using the schema of the process of collaborative care according to CCM evidence. Specifically, they identified on the schema where they believe nurses are actually involved and where involvement may vary among nurses or is infrequent. This was a way for each group to reflect on their practice as well as to validate our results. Moreover, this activity helped update the schema on CCM evidence. According to primary care providers, medical leave was also an important component of the treatment plan for people with CMDs and LTCs.

Following this activity, we presented the problems and strategies prioritized by the Advisory Committee and asked members of the working group if they were relevant to them, if they wanted to work on them and if yes, in what way. Each group was concerned about the identified problems and interested in the strategies, but they selected strategies specific to their context and to the professionals' willingness to change. Finally, a summary of the meeting including the main problems, strategies and objectives discussed during the first meeting was sent to each member of the group.

The format and number of subsequent meetings/discussions to develop strategies and to begin reflecting on the implementation plan differed between FMGs. For instance, in one FMG we met twice with one nurse to develop the strategy to be implemented. E-mail was also used as a method to communicate with each other. In another setting, we planned a second meeting with members of the working group to further develop and prioritize selected strategies from the previous meeting. Our research team also met with a nurse manager at the regional hospital centre to discuss the feasibility of implementing one of the selected strategies as we needed resources and authorization from the employer. Developing strategies also included a review by the research team of existing materials/resources specific to each strategy. Finally, the research team remained available to assist each FMG in pursuing the change of practice, but the implementation and assessment of strategies were not part of the research project as we were mainly interested in the planning process.

Discussion on lessons learned. This step of the process was relevant to validate results, specifically to confirm processes of care as well as the barriers to changing practice in each FMG. Moreover, predominant determinants of change for each setting arose through discussions with primary care providers involved in the working groups. Previous steps of the process (i.e., step 2 and 3), provided a list of determinants to change collaborative practice in each FMG. However, it appears that those determinants were not necessarily specific to professional activities. To help researchers anticipate a broader range of potential barriers, it might be interesting to collect data during the pre-implementation period on the team's readiness to implement change with a validated tool such as the Organizational Readiness for Knowledge Translation questionnaire.[42]

Our experience demonstrates the importance of involving as many clinicians and managers as possible when

selecting strategies for change to facilitate the decision-making process and the involvement of the entire team in the change of practice. We also learned that we can't plan the procedure of each meeting in advance when developing strategies as this depends on too many factors that are not under the research team's control and also depends on the characteristics of selected strategies. Primary care providers are busy with their own work and responsibilities and research is not always their priority.[43] Consequently, the methods we used to reach or involve primary care providers must be flexible and respectful of their workload.

We did not test the effectiveness of our process to plan change, but we encourage other researchers to do so when implementing evidence-based practice. This will contribute to advancing knowledge on how to strategically implement a sustainable change of practice in health care organizations. In general, there is still little knowledge on the effectiveness of using this kind of approach to select implementation strategies tailored to local needs against the more passive dissemination of an evidence-based practice.[44]

Conclusion

This article presents innovative techniques to analyze actual practices when implementing change based on CCM evidence; valuable tools to analyze the problem and to identify strategies tailored to local needs; a description of methods used to involve different groups of stakeholders; and tips to improve the techniques and tools that we used. Future researchers could learn from our experience and more efficiently implement change with stakeholders, though, some limitations of the process still need to be addressed. Planning the implementation of change based on CCM evidence helped select strategies tailored to local needs that might overcome determinants of change impacting the quality of activities and the team's capacity to efficiently implement change.

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publication of this article.

Tables

Table 1. Characteristics of FMGs	Table 1. Characteristics of FMGs	Table 1. Characteristics of FMGs	Table 1. Chara
Characteristics	FMG01	FMG02	FMG03
Registered patients (˜n)	30,000	35,000	13,400
Nurses (n)	6	5	3
Family doctors (˜n)	27	31	11
Nurse practitioners (n)	3	0	2
Social workers (n)	3	3	1
Psychologists (n)	1	1	1
Pharmacists (n)	2	1	1

Table 2. Number and type of participants for each FMG	Table 2. Number and type of participants for each FMG	Table
Type of participants	FMG01	FMG
Primary care nurses	5	5
Patients	3	3
Family doctors	1	1
Social workers	1	1
Nurse practitioners	1	0
Psychologists	0	1
Pharmacists	1	0
Total	12	11

Figure legends

CCM = Collaborative care model

CMD = Common mental disorder

LTC = physical long-term disorder

TX = Treatment

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