

Logic model of a case management program in primary care for frequent users of healthcare services

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Abstract

A logic model was developed as part of an evaluation of a case management program (CMP) for frequent users in a health and social services center in the province of Québec (Canada). Five approaches were used as part of a qualitative multiple case study methodology: analysis of unpublished documents, review of literature on CMPs for frequent users, in-depth interviews, focus groups with stakeholders and participant observations. Collected data were analyzed using thematic analysis and validated by the health and social services center's partners. As an empirical illustration of how the CMP operates, the logic model aims to illustrate causal links between context, resources, activities, and outcomes. To obtain optimal outcomes, the intensity of the activities has to be adapted to the complexity of patient needs. The logic model will help researchers and decision-makers involved or interested in CMP implementation for frequent users of healthcare services to adequately plan and implement the resources and activities of the CMP to achieve desired outcomes.

Keywords: Program evaluation, Logic model, Case management, Frequent users, Complex intervention, Primary care, Healthcare services

Abbreviations: CMP: Case Management Program; ED: Emergency Department; ISP: Individualized Services Plan

Introduction

A logic model was developed as part of an evaluation of a case management program (CMP) for frequent users in a health and social services center in the province of Québec (Canada) [1,2]. The aim of this short report is to present the logic model and illustrate the causal links between five main components for successfully implementing a CMP for frequent users of healthcare services: context, resources, activities, outputs and outcomes [3,4]. More details about the interpretation of the logic model are available in our previous study entitled "Evaluating complex interventions in real context: logic analysis of a case management program for frequent users of healthcare services" [2].

Methods

The logic model was developed using five approaches inspired by Rossi, Lipsey and Freeman [3]: (1) analysis of unpublished documents (administrative documents and other documents about the program's goals and objectives); (2) review of the literature in connection with CMP for frequent users; (3) semi-structured individual interviews with stakeholders; (4) focus groups; and (5) participant observations. Using a purposive sampling [5], one hundred and twenty-nine (129) people were involved. Semi-structured individual interviews were conducted with patients (n=25), decision-makers, case managers and coordinators (n=13), family physicians (n=16), and pharmacists (n=4). Focus groups were conducted with decision-makers, coordinators and case managers (n=4, including 22 people), family physicians (n=2, including 16 people), nurses (n=1, including 3 people), pharmacists (n=2, including 5 people) and community stakeholders (n=4, including 25 people). Inspired from the multi-level conceptual framework suggested by Chaudoir et al. [6], questions asked in the focus group and semi-structured individual interviews concerned the structure and operation of the program, the program challenges, factors that may contribute to a positive impact of the program on the organization and on frequent users, and barriers and facilitators for the implementation of the

CMP. Participant observations were carried out with case managers (n=12), decision-makers (n=25) and family physicians (n=2), during team meetings. The collected data were analyzed by thematic analysis [5]. The logic model was built following a communicative, iterative and participative process [4]. Qualitative data about contexts, resources, activities and outcomes were pooled [3,5]. Subsequent exchanges with main stakeholders (senior managers and case managers) allowed building and validating the logic model [7,8]. Informed consent was obtained from all participants. The study was approved by the ethics committee of the Centre for integrated health and social services of Saguenay-Lac-Saint-Jean.

Results and Discussion

The logic model presented in Figure 1 illustrates causal links between contexts, resources, activities, outputs and outcomes [3,4]. As such, it shows how issues related to patient-level and organisational-level led to the implementation of the CMP; resources mobilization, case management activities, which led to the expected benefits for the patients and the organization. This causal process from the characteristics of the context to the outcomes forms a feedback loop, where the action of an effect influences its own origin.

Context

Frequent users' characteristics refer to chronic conditions, mental health problems, substance use disorders, lack of financial resources and social isolation. Identified issues related to the organization of care and services are access difficulties and lack of coordination and overworked care team. These issues refer more specifically to the absence of a family doctor for some users, the absence of a pivotal/

significant stakeholder, deadlines for evaluation and management of the program, absence of a clear diagnosis, exhaustion of care teams in place, difficulty in information sharing between instances of the health and social services network, and lack of care integration.

Aim

Consequently, coordination and integration of care and services for a population with complex healthcare needs were deployed through a regional CMP.

Resources

To make it effectively, material, financial, organizational, human and community-based resources were available. An insufficiency of any of these resources can prevent the achievement of results, while an adequate access improves the effectiveness of the implementation and outcomes. Material assets (physical spaces, rooms or adequate working environment, office supplies) are basic, but necessary for health centre case managers and healthcare teams in the accomplishment of their activities. Organizational resources referred mainly to program communication and information systems, which ensure access to information and confidentiality, and help to link and coordinate organizations, providers and patients together. Human resources refer to health centre case managers, primary care providers (family physicians and nurses), other health care providers (nutritionists, social workers, kinesiologists, psychologists, etc.), representatives from community-based organizations (CBOs) and community pharmacists. Each of these resources depends on adequate funding from the health system.

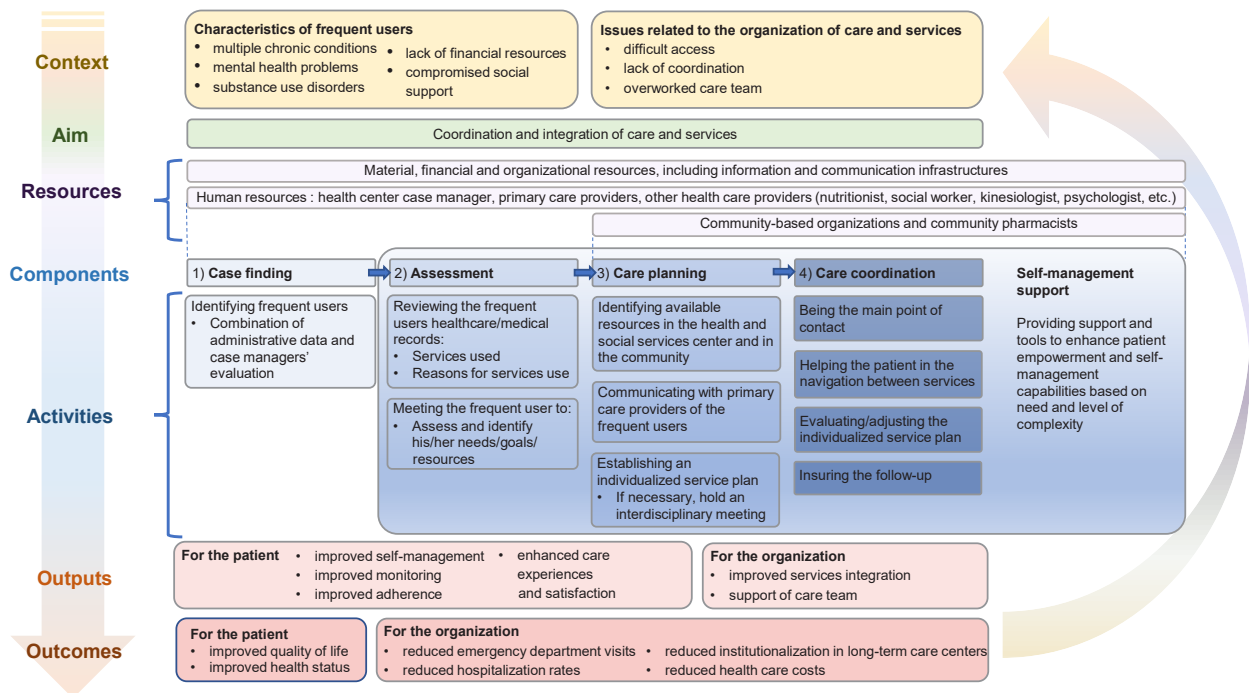


Figure 1: Logic model of the case management program for frequent users.

Components and activities

Resources allocation within the CMP has impacts on the effectiveness of five main case management activities: case finding, assessment of patient and family's needs, care planning, care coordination and self-management support [2]. Case finding refers to the identification of patients who will benefit the most from the intervention and combines administrative data and case managers' judgement to identify frequent users who most need ongoing support [9,10]. Patients were identified as frequent users electronically through hospital admissions and emergency department (ED) records if they had six ED visits or more and/or three hospitalizations or more in the last year. The case manager then analysed the main causes of services use, consulted stakeholders involved in the patients' follow-up (if needed) and evaluated the relevance of offering CMP.

The assessment of patient and family's needs refers to the pre-analysis and withdrawal of users who do not correspond to the CMP criteria. The case manager then analyses the principal causes of utilization of services, consults stakeholders involved in the patients' follow-up (if needed) and evaluates the relevance of offering CMP. When patients are selected and prioritized, care planning allows the establishment of a strategy of services organization adapted to the situation (context), the healthcare team and the patient. The case manager must take into consideration the patient and/or family priorities, needs and life project. He/she identifies available resources, not only in the Health and social services center, but also in the community, and communicates with the patients' primary care providers. Representatives of CBOs and community pharmacists intervene mostly at this step of the CMP but may also help in the assessment and coordination if required. An interdisciplinary team meeting usually results in the implementation of an individualized services plan (ISP).

Coordination refers to the way that services and professionals are mobilized in the care planning, e.g. in the organization, animation and coordination of the ISP. This activity takes into account the follow-up of the patient by providers, which includes monitoring of the patients' utilization of healthcare services, bonds and transitions between services, engagement of providers in care and re-evaluation of the needs and progress of the client. To do this, the case manager must be the main point of contact with frequent users to help them in the navigation between services, but also with other stakeholders.

Finally, self-management support, i.e. the support of the patients' capacity to take responsibility in managing several aspects of their health, is a component within the whole process, from the first assessment to the end of the patient's follow-up by the case manager. The intensity of self-management support evolves according to the patient's needs, health literacy and level of complexity. The efficiency of activities depends on the human resources involved and strong collaboration between stakeholders.

Distal components of the logic model are outputs (direct results of activities) and outcomes (data relative to the desired changes) [3]. For the patient, outputs include the improvement of self-management, monitoring and adherence, while outcomes refer to improvement in quality of life and health status, as well as a better care experience and satisfaction. For the organization, outputs include supported care teams and improved services and care integration, while outcomes refer to the reduction of ED visits, hospitalization rates, health care costs and institutionalization in long-term care centers.

To obtain optimal outcomes, the intensity of the case management activities has to be adapted according to the complexity of the patient's needs [11].

Conclusion

As an empirical illustration of how the CMP operates, this logic model can help researchers and decision-makers involved or interested in CMP implementation for frequent users of healthcare services to adequately use resources and plan CMP activities in a way to achieve desired outcomes.

Limitations

The level of components of the graphic may seem high, but the high level of complexity [12] of this kind of intervention (case management) [13] should be kept in mind.

Conflict of Interest Statement

The authors assert that they have no conflict of interest in this study.

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Author Contributions Statement

CH and MCC conceived the study, obtained research funding, supervised the conduct of the study and coordinated the meetings with the other research team members (MB, AD and VS), and with JM and MV, the senior management partners of the health and social services center. MB was involved in the recruitment of participants and data collection. Data analysis and results validation were ensured by CH, MCC, MB, JM, MV, AD and VS. CH and MB drafted the report, and all authors contributed substantially to its revision. CH takes responsibility for the paper as a whole.

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