Mental health and addictions capacity building for community health centres in Ontario

Akwatu Khenti MA Fiona C. Thomas MSc Sirad Mohamoud MPH Pablo Diaz MD ESP(C) FRCPC
Oriana Vaccarino MA Kate Dunbar Jaime C. Sapag MD MPH PhD

Abstract

Problem addressed In recent years, there has been increased recognition in Canada of the need to strengthen mental health services in primary health care (PHC). Collaborative models, including partnerships between PHC and specialized mental health care providers, have emerged as effective ways for improving access to mental health care and strengthening clinical capacity. Primary health care physicians and other health professionals are well positioned to facilitate the early detection of mental disorders and provide appropriate treatment and follow-up care, helping to tackle stigma toward mental health problems in the process.

Objective of program This 4-year mental health and addiction capacity-building initiative for PHC addressed competency needs at the individual, interprofessional, and organizational levels.

Program description The program included 5 key components: a needs assessment; interprofessional education; mentoring; development of organizational mental health and addiction action plans for each participating community health centre; and creation of an advanced resource manual to support holistic and culturally competent collaborative mental health care. A comprehensive evaluation framework using a mixed-methods approach was applied from the initiation of the program. A total of 184 health workers in 10 community health centres in Ontario participated in the program, including physicians, nurses, social workers, and administrative staff.

Conclusion Evaluation findings demonstrated high satisfaction with the training, improved competencies, and individual behavioural and organizational changes. By building capacity to integrate holistic and culturally appropriate care, this competency-based program is a promising model with strong potential to be adapted and scaled up for PHC organizations nationally and internationally.

EDITOR'S KEY POINTS

- The 5 key components of this mental health and addictions (MH&A) capacity-building initiative (needs assessment, interprofessional education, mentoring, development of organizational action plans, and development of a primary health care [PHC] resource manual for collaborative mental health) had positive effects on professional practice within participating community health centres.
- This program evaluation highlights the need for more MH&A capacity building within PHC settings, especially given that PHC is usually the first (or only) point of contact for individuals with MH&A issues. The results also demonstrated beneficial effects on the knowledge and skills of participants and overall self-rated progress in core competencies.
- Developing a curriculum based on the needs of community health centre staff ensured the relevance of content to practice, but it was challenging to tailor a training program to a diverse professional audience.

This article has been peer reviewed.
Can Fam Physician 2017;63:e416-24

Améliorer la prise en charge des problèmes de santé mentale et de dépendance dans les centres de santé communautaires de l'Ontario

Akwatu Khenti MA **Fiona C. Thomas** MSc **Sirad Mohamoud** MPH **Pablo Diaz** MD ESP(C) FRCPC
Oriana Vaccarino MA **Kate Dunbar** **Jaime C. Sapag** MD MPH PhD

Résumé

Problème à l'étude Au cours des dernières années, au Canada, on a réalisé qu'il devenait de plus en plus nécessaire d'améliorer les services de santé mentale dans les milieux de premiers soins (MPS). Des modèles basés sur la collaboration, par exemple des partenariats entre certains MPS et des soignants spécialisés en santé mentale, sont apparus comme des moyens efficaces d'améliorer la prise en charge des problèmes de santé mentale et la capacité des cliniques. Les médecins et les autres soignants de première ligne sont bien placés pour faciliter la détection des problèmes de cette nature et pour offrir un traitement et un suivi appropriés, tout en aidant à s'attaquer aux préjugés concernant la maladie mentale.

Objectif du programme Ce programme de 4 ans voulait améliorer la prise en charge des problèmes de santé mentale et de dépendance dans les MPS en identifiant les besoins en matière de compétences, aux niveaux personnel, interprofessionnel et organisationnel.

Description du programme Le programme repose sur 5 composantes : une évaluation des besoins; une formation interprofessionnelle; un mentorat; la mise en place de plans d'action pour la santé mentale et la dépendance pour chacun des centres de santé communautaires participants; et la rédaction d'un manuel sur les ressources disponibles pour favoriser des soins de santé mentale holistiques auxquels participe toute l'équipe et qui respectent les cultures. Un cadre d'évaluation global utilisant une approche de méthodes mixtes a été mis en place dès l'instauration du programme. Au total, 184 travailleurs de la santé de 10 centres de santé communautaires de l'Ontario ont participé au programme, y compris des médecins, des infirmières, des travailleurs sociaux et des membres du personnel administratif.

Conclusion Les résultats de l'évaluation indiquaient une grande satisfaction à l'égard de la formation, de l'amélioration des compétences, et des changements au niveau de l'organisation et des comportements individuels. En renforçant les capacités de dispenser des soins holistiques et respectueux des cultures, ce programme axé sur les compétences devient un modèle prometteur, fort susceptible d'être adapté et amélioré pour tout organisme de SPL au Canada et dans le monde.

POINTS DE REPÈRE DU RÉDACTEUR

- Les 5 composantes clés de ce programme visant une meilleure prise en charge des problèmes de santé mentale et de dépendance (SM et D) (évaluation des besoins, formation interprofessionnelle, mentorat, élaboration de plans pour certaines mesures organisationnelles et rédaction d'un manuel à l'intention des soignants de première ligne [SPL] sur les ressources disponibles pour assurer une meilleure collaboration en santé mentale) ont eu un effet positif sur le travail des professionnels de la santé des centres participants.

- L'évaluation du programme montre clairement la nécessité d'améliorer la prise en charge des problèmes de SM et D dans les cliniques de soins primaires, notamment parce que le SPL est souvent la première (ou la seule) personne que rencontre un patient avec un problème de SM et D. Les résultats montrent aussi que le programme a eu des effets bénéfiques sur les connaissances et les compétences des participants, ainsi que des progrès dans l'auto-évaluation globale qu'ils font de leurs compétences de base.

- L'élaboration d'un curriculum axé sur les besoins du personnel d'un centre de santé communautaire a permis d'assurer la pertinence de son contenu dans la pratique; il s'est toutefois avéré difficile de créer un programme de formation qui convienne à un auditoire professionnel diversifié.

Cet article a fait l'objet d'une révision par des pairs.
Can Fam Physician 2017;63:e416-24

In Canada, collaborative mental health care has emerged during the past decade as an integral component of health systems reform. Collaborative models have been endorsed provincially, nationally, and globally as part of health system renewals, especially in efforts to meet the demands of complex chronic illnesses, including mental health and addictions (MH&A),[1] which are often first seen and treated at the primary health care (PHC) level.[2,3]

Some research has focused on core competencies for the provision of MH&A services, but to date no core competencies have been defined for providing MH&A services specifically within PHC settings.[4] There is also a dearth of research on efforts to strengthen holistic and culturally competent care, viewed as essential for improving access and care for diverse and marginalized populations.[5]

Capacity-building programs fundamentally involve improving competencies and instituting change.[6] Previous studies involving interprofessional education (IPE)* demonstrated marked improvements in knowledge about collaboration, collaborative behaviour, and delivery of patient care.[7-9] Family physicians have a critical role in addressing MH&A issues in the context of an interprofessional team.[2,10] Ultimately, for collaborative care to be successful, PHC professionals must be competent to practise in such teams.[11] For this reason, IPE must be advanced simultaneously with interprofessional care.[12]

Capacity-building programs are inherently complex to implement and evaluate.[13] It is particularly difficult to linearly assess the success of complex educational interventions based on causal assumptions, given the number of multifaceted interactions, the various stakeholders involved (with varying backgrounds), the differing contexts, and sometimes the variations in the implementation of educational interventions.[14] There is a critical need for leadership in ensuring changes are adopted and sustained.[15]

Community health centres (CHCs) provide an opportunity to better address MH&A challenges through holistic and culturally competent care at the PHC level.[16] Most persons with MH&A problems present first at this point of contact and many do not go on to other specialized care. Compared with the general Ontario population, CHCs serve a higher proportion of patients with severe mental illness and chronic health conditions, who are generally from lower-income neighbourhoods and are predominantly on social assistance.[17]

Objective of program

This article presents the evaluation results of the Mental Health and Addiction Capacity Building Program for CHCs in Ontario. The initiative was developed by the Office of Transformative Global Health (OTGH) at the Centre for Addiction and Mental Health (CAMH) in Toronto, Ont. Its purpose was to enhance competencies at the individual, interprofessional, and organizational levels to effectively address the MH&A needs of patients at participating CHCs. A total of 184 health workers in 10 CHCs participated in the program, including physicians, nurses, social workers, and administrative staff. The program included 5 components: a needs assessment; training, including modules based on needs, research, and internationally recognized best practices, using an adult IPE model; mentoring and follow-up; development of organizational MH&A action plans for each CHC; and development of an advanced resource manual for collaborative mental health. The findings will be useful for clarifying key competencies in the provision of MH&A services in PHC settings and also for adapting and scaling up similar capacity-building initiatives in Canada and internationally.

Program description

Needs assessment. Before launching the initiative, a needs assessment was conducted to assess MH&A knowledge and skills among front-line staff and organizational capacity at each CHC for supporting and sustaining the program. A qualitative and quantitative approach, including document reviews, questionnaires, and key informant interviews, enabled the development and implementation of individualized training to supplement our core course material to meet the specific needs of each CHC.

Training modules. The training included 6 3-hour learning modules presenting research and internationally recognized best practices on topics including mood and anxiety disorders and psychosis, substance use and other addictive behaviour, screening and assessment, collaborative care, health promotion, family and community involvement, and self-care for CHC professionals. Principles related to holistic and cultural competencies informed all aspects of the planning process. The program integrated the principles of IPE throughout its curriculum. Training was provided through a competency-based program and delivered through an IPE model.

The core curriculum was supplemented with "flex sessions," which provided an opportunity to address the specific needs identified at each centre. All modules were developed with special emphasis on concurrent disorders, cultural issues, and collaborative care. An interdisciplinary faculty team from CAMH provided in-depth instruction, training, and consultation. Modules were taught on site at the 10 CHCs over a 4-year period (2008 to 2012), which included developmental sites and training in phases. The CHCs were based in the greater Toronto area and in London, Ont.

*The capacity-building program discussed here adopted an interprofessional education model, which can be defined as any type of educational, training, teaching, or learning session in which 2 or more health and social care professionals learn interactively.[7]

Mentoring and follow-up. Ongoing mentoring opportunities enabled participants to integrate the training into their practices while receiving ongoing support from the OTGH team and faculty members. Sessions for professional support with case consultation (in person and via e-mail) were also part of the follow-up portion of the program. Finally, an online platform, housed within the CAMH knowledge exchange site (**www.porticonetwork.ca/web/collaborative-mental-health/about-us**), also supported participants.

Mental health and addictions action plans. As part of the fourth component, CHC participants were invited to work together to develop an organizational action plan to foster MH&A inclusiveness and service provision within their overall strategic plan. These action plans also helped lay the foundation for an ongoing collaborative partnership between the individual centres and CAMH. Key coordinating members from each CHC developed the plans, including summaries of existing services within each CHC, a review of important barriers to accessing services among patients, and strengths of their organization that could be used as MH&A initiatives are further integrated with existing services. Staff members were also encouraged to articulate how the plans could be implemented, including details about redirecting resources, what shifts in organizational structure might be required, evaluation plans, and how links with CAMH could be further developed to support the integration of MH&A initiatives.

Collaborative mental health resource manual. This manual is intended to provide CHC health professionals with information about common MH&A problems, the issues affecting MH&A patients' access to care, and alternative frameworks for approaching patient care. It provides professionals with concrete tools and practical resources they can use in their practices.[18]

Program evaluation

Evaluation framework and design. A comprehensive evaluative framework and a mixed-methods approach were used to assess the process and effects of the initiative on participant satisfaction, enhancement of competencies, behavioural change, organizational practices, and benefits for patients. The evaluation framework applied here was first developed by Barr et al[8] and adapted from Kirkpatrick's 4-point typology of educational outcomes (reaction, learning, behaviour, and results).[19,20] **Table 1** presents the evaluation process for assessing how training affected the competencies of participants: particular attention was paid to how participants reacted to the program, changes in their interest and attitudes, the acquisition of knowledge and skills, and behavioural changes.[8,20] This kind of evaluation model is known to be effective for complex educational programs like this capacity-building initiative.[21]

Data collection. Data collection consisted of baseline, end-of-session, and final evaluation questionnaires, with Likert items and open-ended questions throughout the training.

The pretraining needs assessment was essential to tailoring the program for each individual centre. It gathered information about participants' interest, knowledge, and skills in areas relevant to MH&A. Participants also provided information about their degree of contact with patients with mental health issues and information detailing their roles at the centre. A total of 184 baseline evaluations were collected across the 10 centres.

End-of-session evaluations provided quantitative and qualitative feedback concerning participants' overall satisfaction with the session, the relevance and potential applications it had for their work, the strengths and weaknesses of the sessions, and suggestions for future training.

The same quantitative questions used in the baseline evaluation of interest, knowledge, and skills were asked at the end of the training to determine whether any changes had occurred in participants. Qualitative questions were also asked to collect in-depth feedback about various aspects of the program, including opportunities for application within their centre and specific outcomes of the training. Evaluations were conducted in English at all CHCs, and a total of 122 final evaluations were collected across the 10 centres.

Throughout the training, participants were encouraged to discuss their experiences with each other, with the CHC coordinator, and with the OTGH coordinators, particularly with regard to any changes in their practices as a result of the training. The training coordinator took notes during these discussions, which also informed the findings.

Data analysis. Quantitative data were analyzed using SPSS, version 21.0. Descriptive statistics were reported and paired-sample *t* tests were conducted to assess changes before and after training. Qualitative data were analyzed using directed content analysis.[22] The final results were triangulated using a mixed-methods approach.[23]

Ethical procedures. Because this was an evaluative project, formal research ethics board approval was not needed. Nonetheless, informed consent was obtained from all participants and confidentiality was ensured. The Standards for Educational Evaluation were also followed.[24]

Results. A total of 184 professionals participated in the program: clinical front-line staff members such as family physicians, nurses, nurse practitioners, and mental health counselors (57.0%); community health workers

Table 1. Evaluation components

EDUCATIONAL OUTCOME	EXAMPLE OUTCOMES	EVALUATION INSTRUMENT OR METHOD
Reaction	Participants' views on the capacity-building training program	Overall satisfaction survey (quantitative and qualitative) Group discussion (qualitative)
Learning (competencies)		
• Overall progress	Perception of overall progress in key 15 competencies	Survey on self-reported overall progress
• Modification of attitudes and perceptions	Changes in perception or attitudes toward patients with MH&A issues	Willingness surveys (quantitative, before and after the initiative)
• Acquisition of knowledge and skills	Knowledge and skills related to 15 core competencies	Interest and knowledge surveys (quantitative, before and after the initiative)
Behavioural change	Changes to professional practice within the PHC setting	Self-report surveys (quantitative and qualitative, before and after the initiative) Performance change surveys (quantitative and qualitative)
Change in organizational practice	Effects and changes in PHC organizations and related health care systems	Organizational action plans
Benefits to patients	Improvements in health or well-being of patients	Proxy indicators from the perspective of health workers

MH&A—mental health and addictions, PHC—primary health care.
Adapted from Barr et al[8] and Curran et al.[20]

(22.4%); directors and managers (9.7%); administrative staff (7.9%); and other professionals (3.0%).

The results, both quantitative and qualitative, of the evaluations before and after the initiative are presented below, assessing perceptions of the program, self-rated perception of competencies, individual behavioural changes, organizational changes, and benefits to patients.

Participant reaction: The final evaluation included 7 quantitative questions about satisfaction with the program as a whole. For all items, the average among all participants was above 3.79 on a 5-point Likert scale with 1 representing "strongly disagree" and 5 representing "strongly agree." In response to the statement "I am satisfied with the training overall," the average response among all participants was 4.04, indicating a high level of overall satisfaction. Participants most strongly agreed that there were sufficient opportunities for interaction and participation, that the topics covered were relevant, and that the training met their expectations.

Qualitative data indicated that participants especially appreciated the opportunity to explore issues related to MH&A alongside their CHC colleagues. This opened up the possibility for interdisciplinary discussion and collaboration among the larger teams, provided participants with a better understanding of different professional roles, and reinforced the idea that support for patients with MH&A challenges is a team effort.

> I think it raised mental health as an issue to consider in my work.

> [The training allowed us to identify] more opportunities for collaboration with my internal and external colleagues.

> [The program helped us to] restart our process of interactions in between the other disciplines in the centre, to facilitate a frame for internal referrals, and [to know] when and how [to] use external referrals.

Learning (competencies): Participants ranked their perceptions of their own overall advancement in 15 core competencies. **Table 2** lists the average overall self-rated progress among participants at all 10 CHCs. Competencies were rated on a 6-point Likert scale, with 0 representing no advancement and 5 representing high advancement. Self-rated progress in core competencies increased the most for self-care and least for psychosis in PHC. While a small minority of participants reported no advancement in core competencies, more than 80% of all participants indicated some level of progress in each of the 15 core competencies. Among those participants who reported some degree of progress in each of the competencies, the overall average advancement was 2.77, indicating good overall progress in all areas measured.

The acquisition of knowledge and skills in the 15 core competencies was also assessed based on interest and knowledge surveys before and after the initiative. While the level of interest did not change as a result of the program, evaluations before the initiative revealed a substantial gap between participants'

Table 2. Overall self-rated progress in 15 core competencies: *Competencies were rated on a 6-point Likert scale, with 0 representing no advancement and 5 representing high advancement.*

CORE COMPETENCIES	MEAN (SD) DIFFERENCE FROM BASELINE
Self-care	2.93 (1.57)
Exploring values, beliefs, and attitudes about patients	2.89 (1.24)
Mood disorders in PHC	2.84 (1.19)
Addictions in PHC	2.84 (1.26)
Recognizing and stopping stigma and discrimination	2.81 (1.50)
Mental health in PHC	2.79 (1.22)
Assessing mental health issues	2.72 (1.40)
Effective interprofessional collaboration	2.70 (1.47)
Anxiety disorders in PHC	2.69 (1.37)
Understanding the concept of collaborative care	2.66 (1.50)
Issues of diversity and culture	2.63 (1.36)
Mental health promotion	2.60 (1.47)
Mental health and addictions screening in PHC	2.58 (1.48)
Assessing concurrent disorders in PHC	2.52 (1.29)
Psychosis in PHC	2.30 (1.34)

PHC—primary health care.

interest and their perceived skills and knowledge. After the training, this gap was markedly reduced, indicating that participants had acquired knowledge and skill in the areas of professional interest to them (**Figure 1**). The results demonstrated a statistically significant increase in knowledge across all fields.

Comparison of the baseline and the final scores revealed an overall improvement among all participants in terms of their willingness to see patients with MH&A problems, although the improvement was less substantial than for other scores. For example, willingness to see those with drug dependence had a baseline mean score of 6.73 (n = 162), which increased to 7.18 (n = 104) after training (SD = 1.98).

Behavioural change: Participants were asked to describe their current application, or potential for future application, of lessons learned through the training within their workplace. The results varied among CHCs, but one commonality was that many participants had begun, or intended to begin, using a harm-reduction approach and motivational interviewing techniques with their patients. Although participants believed they had not received enough information to use this technique with confidence, this skill was overwhelmingly referred to as one of the most applicable tools for assisting patients in PHC.

> [I am] using [a] motivational technique more, getting people to think about their own goals and conflicts.

> I could apply motivation interviewing with parents resistant to interventions with their children.

Several participants referred to the session on self-care, commenting that it was related to both improved personal care and improved support among team members.

Others referred to improved interprofessional relationships; one participant commented that increased clarity about professional roles and the biopsychosocial model was useful in strengthening both internal and external referral processes, particularly for patients with complex cases. Some also mentioned how their increased awareness of personal attitudes, bias, and stigma toward MH&A helped them provide better care to patients: "I am more aware of my own stigmas and try to work on that as well as those of the team."

Change in organizational practice: Many participants commented that the training improved their awareness of the strengths and challenges within their centre, as well as the successes, and helped improve their understanding of their organization's goals. In one CHC in particular, clinical staff started using screening tools for substance use and other addictive behaviour earlier in treatment, which resulted in earlier and appropriate diagnoses for individuals.

> The sessions allowed the opportunity for providers to share and highlight centre strengths.

> The group is willing to readapt and learn from these differences and open their well intentioned and long time expected frame [sic] for primary care in this topic of mental disease and substance addictions.

> In our ... centre we identified a child using drugs, whereas prior to the training, [it] wasn't a concern or worry for the staff.

Participants reported a desire to expand internal collaborative networks within their centres, particularly with regard to case discussions among different care providers, and identified enhanced collaboration with multiple external partners as a key next step.

Clinical team members referred to the effectiveness of the new screening tools they had acquired through training. Both clinical and nonclinical team members from all centres said that the knowledge they had gained in the substance use sessions would be beneficial in their future encounters and that the training

Figure 1. Self-rated levels of knowledge and skills regarding 15 core competencies before and after the initiative: *Knowledge and skill were rated on a 5-point Likert scale ranging from 1 (low) to 5 (high).*

	Mental health in PHC	Mood disorders in PHC	Anxiety disorders in PHC	Psychosis in PHC	Addictions in PHC	Exploring values, beliefs, and attitudes about patients	Assessing mental health issues	Assessing concurrent disorders in PHC	MH&A screening in PHC	Effective inter-professional collaboration	Understanding the concept of collaborative care	Mental health promotion	Self-care	Issues of diversity and culture	Recognizing and stopping stigma and discrimination
BASELINE KNOWLEDGE	2.94	2.91	2.96	2.42	2.18	3.04	2.74	2.57	2.33	3.17	3.02	2.65	3.28	2.90	3.10
FINAL KNOWLEDGE	3.42	3.38	3.39	2.93	3.30	3.61	3.29	3.03	2.98	3.69	3.49	3.30	3.93	3.37	3.60
BASELINE SKILL	2.77	2.68	2.70	2.23	2.40	2.85	2.54	2.28	2.20	3.04	2.87	2.50	3.03	2.70	2.90
FINAL SKILL	3.25	3.25	3.20	2.73	3.06	3.45	3.13	2.84	2.90	3.64	3.39	3.19	3.75	3.27	3.42

CORE COMPETENCIES

MH&A—mental health and addictions, PHC—primary health care.

had increased their confidence in managing the related needs of their patients.

Benefits to patients: The limited time frame of this initiative did not allow the assessment of long-term patient outcomes from this program; future evaluations of similar training initiatives would benefit from longer-term assessments of patient outcomes.

Discussion

The results demonstrated that the 5 key components of this initiative (needs assessment, IPE, mentoring, development of organizational MH&A action plans, and development of a PHC resource manual for collaborative mental health) had positive effects on professional practice within participating CHCs. In particular, the results highlight the need for more MH&A capacity building within PHC settings, especially given that PHC is usually the first (or only) point of contact for individuals with MH&A issues. The results also demonstrated beneficial effects on the knowledge and skills of participants and overall self-rated progress in core competencies.

In addition to knowledge and skills, the element of attitude is critical to the development of competencies. In MH&A services, where stigma and discrimination can impede access to services, this component is even more critical.[25] The evaluation after the initiative revealed some positive changes in attitudes, but these were less meaningful than the changes in knowledge and skills. Changing attitudes and perceptions usually takes more time, even after knowledge and skills have improved. Longer-term evaluations will be needed to assess changes in attitudes over time and how these affect patient and family outcomes.

Other valuable lessons were learned during the period of program development and implementation. Developing a curriculum based on the needs of CHC staff ensured the relevance of content to practice,[6] but it was challenging to tailor a training program to a diverse professional audience. Some participants found the content too basic, and others believed the amount of time allotted for training was insufficient.

Limitations. Our evaluation methods also had some limitations. Some participants found the regular evaluations throughout the program excessive. Future program designs might be best served by integrating sufficient opportunities for data collection while not assessing participants to the point of "evaluation fatigue." Another constraint was that the evaluations were completed immediately after several weeks of rigorous training.

Future training programs might be improved by leaving sufficient time between training and evaluation to allow participants to implement the tools learned through the program. This might also help improve the issue of low response rates. Finally, competencies were assessed using a self-report tool, which has limitations. Still, self-reports were appropriate for this evaluation, given that participation was voluntary and it would be burdensome for participants to complete an empirical examination of their competencies. Self-reported results can also inform the design of future capacity-building programs by providing a foundation for key areas to focus on.

Despite these limitations, the findings demonstrate the value of capacity-building efforts in improving competencies and contributing to changes in individual behaviour and in organizational practice. The interplay between individual competencies and organizational factors is critical to ensuring the readiness of CHCs to adopt, adapt, and sustain new practices.[26]

As noted, it is too soon to evaluate patient outcomes as a result of this training, but previous studies have reported that collaborative partnerships improve patient outcomes in the short and long term.[2] These benefits have been measured in terms of functional improvement, reduced disability days, increased workplace tenure, and increased compliance with medication.

In addition to patient outcomes, Doll and Trueit[27] emphasized the value of reviewing relationships among participants (with each other and with their environments) as an element in evaluating a program's success. Future program evaluations of similar capacity-building initiatives would benefit from considering this element among the evaluation components.

Conclusion

In recent years, international interest has increasingly been focused on improving MH&A services within PHC settings. The World Health Organization supports this integration, promoting it as a way to improve access to person-centred mental health care.[28] The Ontario Ministry of Health is currently investing substantially in innovative and effective approaches to MH&A care within PHC settings. This capacity-building program was developed and implemented within this context, and the results indicate that implementing similar capacity-building initiatives will help improve professional practice. Evaluation data such as the findings presented here are important for informing similar capacity-building initiatives in other jurisdictions. They can help the developers of such initiatives learn from previous successes and identify what can be adapted to meet emerging needs.[2] Nonetheless, it remains the case that more research is needed to assess how this kind of initiative affects health care outcomes.

Mr Khenti is Director of the Office of Transformative Global Health (OTGH) in the Institute for Mental Health Policy Research at the Centre for Addiction and Mental Health (CAMH) in Toronto, Ont, and Assistant Professor in the Dalla Lana School of Public Health at the University of Toronto. **Ms Thomas** is a doctoral student in the Community-Engaged Research on Culture and Health Laboratory in the Department of Psychology at Ryerson University in Toronto and worked closely with the OTGH at CAMH. **Mr Mohamoud** is Senior Policy Advisor at the Ministry of Health and Long-Term Care in Toronto. **Dr Diaz** is a psychiatrist in the Schizophrenia Program at CAMH and is Assistant Professor in the Department of Psychiatry at the University of Toronto. **Ms Vaccarino** is a doctoral student in Applied Social Psychology at the University of Guelph in Ontario and worked closely with the OTGH at CAMH. **Ms Dunbar** was a coordinator in this capacity-building initiative in the OTGH in the Institute for Mental Health Policy Research at CAMH. **Dr Sapag** is Project Scientist in the OTGH at CAMH and Associate Professor in the Department of Public Health and the Department of Family Medicine in the School of Medicine of the Faculty of Medicine at the Pontificia Universidad Católica de Chile.

Contributors

All authors contributed to the concept and design of the program and evaluation; data gathering, analysis, and interpretation; and preparing the manuscript for submission.

Competing interests

None declared

Correspondence

Dr Jaime C. Sapag; e-mail **jaime.sapag@camh.ca**

References

1. Mental Health Commission of Canada. *Informing the future: mental health indicators for Canada*. Ottawa, ON: Mental Health Commission of Canada; 2015.
2. Kates N, Mazowita G, Lemire F, Jayabarathan A, Bland R, Selby P, et al. The evolution of collaborative mental health care in Canada: a shared vision for the future [Insert]. *Can J Psychiatry* 2011;56(5):1-10.
3. Sapag JC, Rush B. Evaluation of primary care mental health. In: Ivbijaro G, editor. *Companion to primary care mental health*. London, Engl: World Organization of Family Doctors, Radcliffe Publishing; 2012. p. 138-52.
4. Rush B, McPherson-Doe C, Behrooz RC, Cudmore A. Exploring core competencies for mental health and addictions work within a family health team setting. *Ment Health Fam Med* 2013;10(2):89-100.
5. Kamrul R, Malin G, Ramsden VR. Beauty of patient-centred care within a cultural context. *Can Fam Physician* 2014;60:313-5 (Eng), 316-8 (Fr).
6. Talbot Y, Takeda S, Riutort M, Bhattacharyya OK. Capacity-building in family health. Innovative in-service training program for teams in Latin America. *Can Fam Physician* 2009;55:613.e1-6. Available from: **www.cfp.ca/content/cfp/55/6/613.full.pdf**. Accessed 2017 Aug 25.
7. Reeves S, Perrier L, Goldman J, Freeth D, Zwarenstein M. Interprofessional education: effects on professional practice and health care outcomes (update). *Cochrane Database Syst Rev* 2013;(3):CD002213.
8. Barr H, Koppel I, Reeves S, Hammick M, Freeth DS. *Effective interprofessional education. Argument, assumption and evidence.* London, Engl: Wiley-Blackwell Publishing; 2005.
9. Lutfiyya MN, Brandt BF, Cerra F. Reflections from the intersection of health professions education and clinical practice: the state of the science of interprofessional education and collaborative practice. *Acad Med* 2016;91(6):766-71.
10. Hodson S, McFarlane A. Australian veterans—identification of mental health issues. *Aust Fam Physician* 2016;45(3):98-101.
11. Starfield B. *Primary care. Balancing health needs, services and technology*. Revised ed. New York, NY: Oxford University Press; 1998.
12. Paré L, Maziade J, Pelletier F, Houle N, Ilioko-Fundi M. Training in interprofessional collaboration. Pedagogic innovation in family medicine units. *Can Fam Physician* 2012;58:e203-9. Available from: **www.cfp.ca/content/cfp/58/4/e203.full.pdf**. Accessed 2017 Aug 28.
13. Cooper H, Braye S, Geyer R. Complexity and interprofessional education. *Learn Health Soc Care* 2004;3(4):179-89.
14. Hutchinson L. Evaluating and researching the effectiveness of educational interventions. *BMJ* 1999;318(7193):1267-9.
15. Shidhaye R, Shrivastava S, Murhar V, Samudre S, Ahuja S, Ramaswamy R, et al. Development and piloting of a plan for integrating mental health in primary care in Sehore district, Madhya Pradesh, India. *Br J Psychiatry* 2016;208(Suppl 56):s13-20. Epub 2015 Oct 7.
16. Dahrouge S, Muldoon L, Ward N, Hogg W, Russell G, Taylor-Sussex R. Roles of nurse practitioners and family physicians in community health centres. *Can Fam Physician* 2014;60:1020-7.
17. Glazier RH, Zagorski BM, Rayner J. *Comparison of primary care models in Ontario by demographics, case mix and emergency department use, 2008/09 to 2009/10*. Toronto, ON: Institute for Clinical Evaluative Sciences; 2012.
18. Khenti A, Sapag JC, Mohamoud S, Ravindran A, editors. *Collaborative mental health: an advanced manual for primary care professionals*. Toronto, ON: Centre for Addiction and Mental Health; 2012.
19. Kirkpatrick DL, Kirkpatrick JD. *Evaluating training programs. The four levels*. 3rd ed. San Francisco, CA: Berret-Koehler Publishers; 2006.

20. Curran V, Sargeant J, Hollett A. Evaluation of an interprofessional continuing professional development initiative in primary health care. *J Contin Educ Health Prof* 2007;27(4):241-52.
21. Frye AW, Hemmer PA. Program evaluation models and related theories: AMEE guide no. 67. *Med Teach* 2012;34(5):e288-99.
22. Attride-Stirling J. Thematic networks: an analytic tool for qualitative research. *Qual Res* 2001;1(3):385-405.
23. Creswell JW, Plano Clark VL. *Designing and conducting mixed methods research.* 2nd ed. Thousand Oaks, CA: Sage Publications; 2011.
24. Yarbrough DB, Shulha LM, Hopson RK, Caruthers FA. *The program evaluation standards. A guide for evaluators and evaluation users.* 3rd ed. Thousand Oaks, CA: Sage Publications; 2011.
25. Corrigan PW, Mittal D, Reaves CM, Haynes TF, Han X, Morris S, et al. Mental health stigma and primary health care decisions. *Psychiatry Res* 2014;218(1-2):35-8. Epub 2014 Apr 18.
26. Proctor E, Silmere H, Raghavan R, Hovmand P, Aarons G, Bunger A, et al. Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. *Adm Policy Ment Health* 2011;38(2):65-76.
27. Doll WE Jr, Trueit D. Complexity and the health care professions. *J Eval Clin Pract* 2010;16(4):841-8.
28. World Health Organization. *Update of the Mental Health Gap Action Programme (mhGAP) guideline for mental, neurological and substance use disorders*. Geneva, Switz: World Health Organization; 2015.