RESEARCH PAPER

Are Family Medicine Clinics Improving Access to Care through Organizational Changes Driven by Healthcare Reform?

Les cliniques de médecine familiale améliorent-elles l'accès aux soins grâce aux changements organisationnels entraînés par les réformes des soins de santé?

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Abstract

Purpose: This observational descriptive study reports organizational changes after the last reform in 18 family medicine units (FMUs) affiliated with the University of Montreal in Québec.

Method: Two self-administered surveys on access to care were administered to FMU directors between December 2016 and January 2017, and in August 2018.

Results: Between surveys, the number of registered patients increased substantially. All clinics recruited new patients, and most offered walk-in services (89%) and moved toward an advanced access scheduling model (83%). For licensed practical nurses, there was a median increase from 0 to 3 and for nurse clinicians, from 2 to 3, that helped the development of collaborative teamwork.

Conclusion: Despite the added teaching mission, the response of the FMU network has been dynamic, has adapted to the major changes and has continued to actively improve access to care for their communities. Challenges still remain regarding work on key priorities for improving access management.

Résumé

Objectif : Cette étude descriptive observationnelle fait état des changements organisationnels, après la dernière réforme, dans 18 unités de médecine de famille (UMFs) affiliées à l'Université de Montréal au Québec.
Méthode : Deux questionnaires auto-administrés sur l'accès aux soins ont été soumis aux directeurs des UMFs entre décembre 2016 et janvier 2017, et en août 2018.
Résultats : Entre les deux questionnaires, le nombre de patients inscrits a considérablement augmenté. Toutes les cliniques ont recruté de nouveaux patients et la plupart ont offert des services sans rendez-vous (89 %) et ont adopté un modèle avancé pour la planification de l'accès (83 %). Il y a eu une augmentation médiane de 0 à 3 des infirmières auxiliaires et de 2 à 3 des infirmières cliniciennes, ce qui a favorisé le développement du travail d'équipe collaboratif.
Conclusion : Malgré la mission d'enseignement supplémentaire, la réaction du réseau des UMFs a été dynamique, s'est adaptée aux changements majeurs et a permis d'améliorer activement l'accès aux soins pour les communautés concernées. Il reste des défis quant aux priorités clés pour améliorer la gestion de l'accès.

Introduction

Timely and efficient access to primary healthcare (PHC) is a major challenge for many countries around the world, and there is no exception for Canada. Results from the 2016 Commonwealth Fund Survey ranked Canada last in terms of access to timely care among 10 other Western countries (Commissaire à la Santé et au Bien-être 2017).

In 2019, 14.5% of Canadians aged 12 and over reported that they do not have a regular healthcare provider to see or consult with if they need care or advice about their health (Statistics Canada 2020), despite the increase in family physicians. Although there has been an improvement for Canada from 2015 to 2019 (16.8% vs. 14.5%), the province of Québec ranks last (27.8% vs. 21.5%).

A medical model of PHC services called the family medicine group (FMG) has been proposed and scarcely experimented with in early 2000. It has been modified through the years until adding nurse clinicians in 2015–2016 (Dion 2015; Plourde 2017). The addition of healthcare professionals allowed for interdisciplinary work, which has been associated with improved access and quality of care (Beaulieu et al. 2012).

The extent of funding for FMG administrative and professional resources is based on the number of patients enrolled. The minimum funding scale (Level 1) required a minimum of 6,000 patients. As the number of registered patients increases and reaches pre-set levels,

the funding increases and provides the resources to hire more professionals and administrative personnel (MSSS 2017). Since then, other professionals (licensed practical nurses, social workers, pharmacists, nutritionists, less often physiotherapists, kinesiologists, and psychologists) were added to FMGs according to their funding scale. Other criteria are required to obtain funding, such as a minimum of 68 hours/week of services, including weekends and holidays, and the use of electronic medical records.

Access to family physicians was the cornerstone of another reform introduced in 2015 in Québec: Bill 20 (Barette 2015). It specifically addressed access, setting the target of having 85% of the population registered with a family physician by 2023, up from 70.5% in 2015 (ISQ 2021; MSSS 2021). Family physicians were required to provide medical follow-up to a minimum number of patients and work a minimum number of hours (12 hours/week) in an institution (long-term care facilities, hospital services, etc.) or face penalties of up to 30% of their remuneration. Bill 20 also made FMGs responsible for ensuring that registered patients obtained at least 80% of their care at the FMG, with funding cuts threatened if more than 20% of patients went elsewhere (another walk-in clinic, emergency visit). The bill was adopted in November 2016, but after tough discussions, the minister reached an agreement with the Fédération des médecins omnipraticiens du Québec, and the application of penalties was suspended until December 2017 (MSSS 2015).

At the same time, with the same concern of improving access to care, many clinics in Québec were adopting the advanced access (AA) scheduling model, which aims to offer patients visits with their physicians within a very short time frame, unlike the traditional approach where all available appointments are booked several weeks in advance. An evaluation of the implementation of AA is being completed (Breton et al. 2020).

In April 2017, it became mandatory for all family medicine units (FMUs) in Québec to adopt the FMG model (MSSS 2020), in addition to complying with the requirements of Bill 20 (Barette 2015). FMUs are clinics affiliated with a university. They provide comprehensive care for patients and academic training for medical students, family medicine residents, nurse practitioners and other healthcare professionals. This new bill forced the FMUs to quickly implement a variety of measures to meet the FMG's requirements while fulfilling their clinical and educational mandates and creating an exemplary model in which to train future family physicians and other PHC providers. Faced with these new requirements, the threat of discontinuation of funding and closure of some small teaching clinics in rural and urban areas that did not initially meet the required criteria for an FMG (such as having 6,000 patients registered), a request to better assess the current picture of access to the teaching network was made by the group of directors of teaching clinics headed by the director of the Department of Family Medicine and Emergency Medicine at the University of Montreal. This study presents the organizational changes undertaken in the academic family medicine network, with a focus on the evolution of access to care.

Method

Study design and settings

This observational descriptive study was conducted in all 18 FMUs affiliated with the Department of Family Medicine and Emergency Medicine at the University of Montreal. A presentation of the project was made to the 18 FMU directors (one per FMU) during one of their regular meetings. All of them were invited to participate and asked to complete a self-administered electronic survey. The electronic link to the survey was sent first in December 2016 and January 2017 (up to three reminders were sent by e-mail) and was repeated in August 2018.

Questionnaire

The questionnaire was developed to describe and monitor changes enacted by FMUs between 2016 and 2018. Lévesque et al. (2013) reviewed the literature on the conceptual aspects of accessibility to care and proposed a comprehensive, dynamic theoretical framework that included the main characteristics of PHC, taking into account the perspectives of the health system, clinical groups, health professionals and patients. Five dimensions characterize accessibility from an organizational perspective: approachability; availability and accommodation; affordability; appropriateness; and acceptability. The first four dimensions were considered in this study.

The 2016 questionnaire included 46 questions: 26 questions related to these four dimensions were taken from the 59-question PHC Organizational Survey (CIHI 2008; Haggerty et al. 2006; Lévesque et al. 2014). Permission to use and adapt the questionnaire was obtained from the Canadian Institute for Health Information. The remaining 20 questions collected information about the clinic; number of patients; medical, professional and physical resources; process of accessing care; and services offered (Haggerty and Lévesque 2016; Lévesque et al. 2013). To allow tracking of changes over time, a three-level response scale was chosen for some questions (i.e., change planned for the coming year, change under discussion, no change planned).

In 2018, the questionnaire was adapted by adding questions on their AA scheduling system. In addition, consistent with the methods used in AA, which many FMUs had adopted, timely access was measured for each family physician or resident in the practice using the third-next available appointment indicator. At each clinic, a secretary took responsibility for this measurement after receiving instructions from the researchers. Calculations included weekends and holidays. If family physicians were absent for an extended period (e.g., maternity leave, sick leave and rural rotation for second-year residents), their data were not included.

Statistical analyses

Descriptive analyses using frequencies and measures of central tendencies were used for each

characteristic and to globally describe the 18 clinics in 2016 and 2018. Because all FMUs participated in the study, no statistical inference was made. The application used to create the survey was SurveyMonkey. Data were analyzed using Excel (14.7.1).

Ethics approval

The research and ethics committee of the Centre intégré de santé et de services sociaux de Laval approved the study (#2017-2018 / 04-01-E).

Results

Results presented in this paper focus mainly on change in availability/accommodation (Lévesque et al. 2013), increasing access for new patients without a family physician, improving timely access and barriers to improving access and improving adequacy of services (interdisciplinary collaboration).

Clinic characteristics

All 18 FMUs' directors affiliated with the University of Montreal participated in the survey. Four were in rural areas, two in cities farther than 150 km from Montreal, six in Montreal and six in suburbs around Montreal.

AVAILABILITY AND ACCOMMODATION

Increasing access to orphan patients

1. *Organizational changes*: Before the 2016 survey, 12 of the 18 FMUs (67%) had undergone major structural changes – such as an association or a merger with another medical clinic to meet the FMG funding criteria (reaching a minimum of 6,000 patients and offering a minimum of 68 hours/ week of services) or a dissociation after reaching the requirements. In 2018, nine of the 18 FMUs (50%) had undertaken structural changes since 2016, some for the second time. Only three of the 18 clinics remained stable in their administrative structure.
2. *New staff physicians*: The median number of staff family physicians per clinic was 12.5 in 2016, increasing to 16 in 2018 (Table 1).
3. *Number of patients registered:* All clinics continued to register new patients at the time of the second survey. Two clinics merged with another clinic into

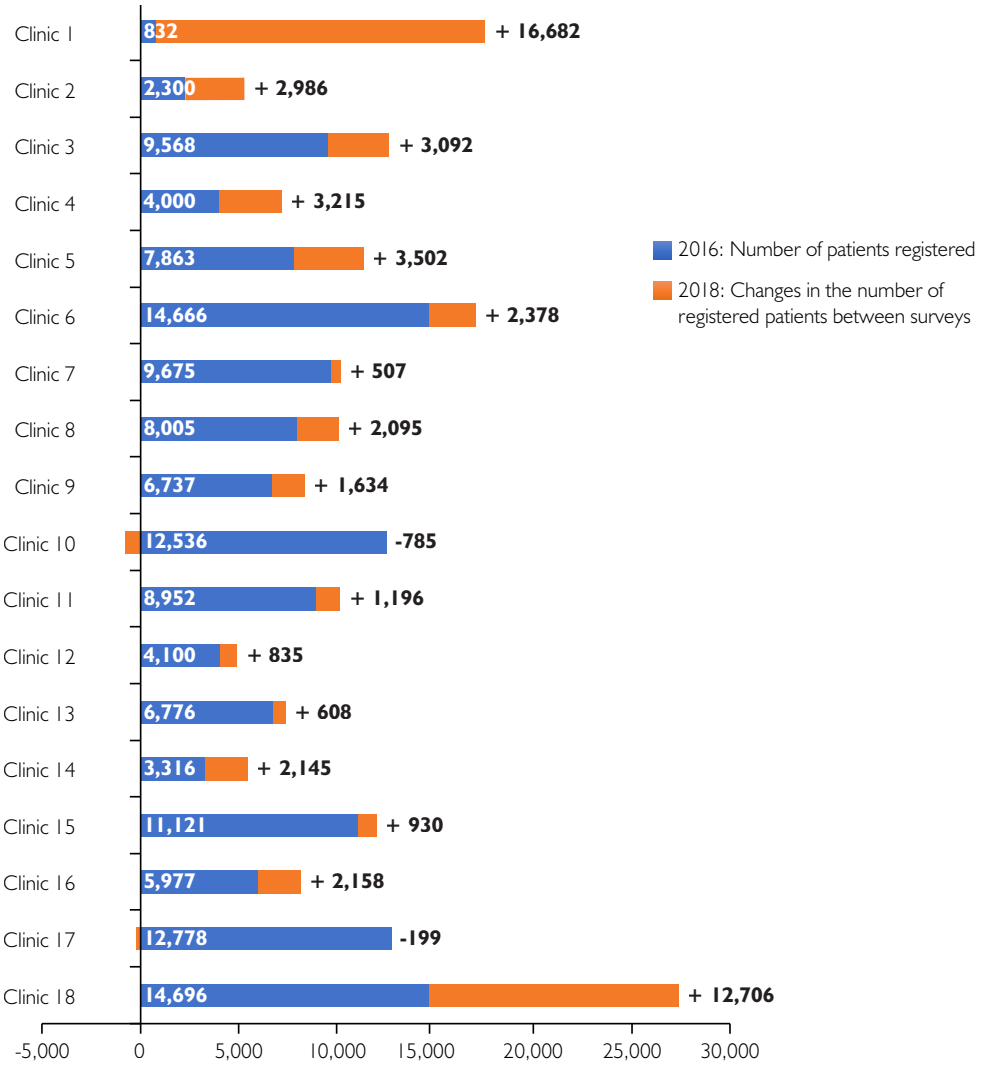
TABLE 1. Evolution of the number of staff physicians and full-time professionals in the family medicine clinics network

Type of professional per clinic	2016 Median (range)**	2018 Median (range)**
Staff physicians*	12.5 (0–22)	16 (5–29)
Staff across network	218	309
Clinical nurses	2 (0.4–9.3)	3 (0.7–6)
Assistant nurses	0 (0–1.9)	3 (1.6–5)
Nurse practitioners	1 (0–5)	2 (0–4)
Pharmacists	0.2 (0–1)	0.2 (0–1)
Nutritionists	0 (0–0.5)	0 (0–0.5)
Social workers	0.25 (0–2)	1 (0–2)

* Staff: Number of physicians having their own practice in the same family medicine unit. Total number across the network was 218 in 2016 and 309 in 2018.
**1 = Full-time.

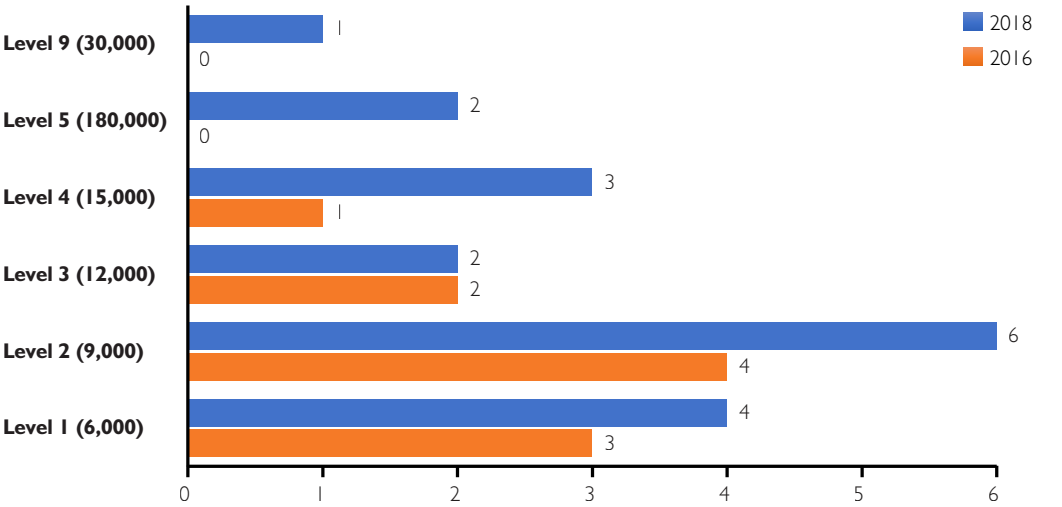
a single administrative and clinical entity. Therefore, combining their registered patients inflated and biased the real increase in new patients. Three clinics associated with another clinic kept their administrative functions separate and only shared community tasks, such as hours of operation either on evenings or weekends. The median increase in the number of registered patients was 16%, which represents approximately 2,120 patients per clinic. The total number of patients registered with network FMUs increased by more than 50,000. Larger increases (greater than 30%) were more common in clinics that merged (clinics 1 and 2) or associated with another clinic (clinics 3, 4 and 5) (Figure 1).

FIGURE 1. Number of registered patients in 2016 and changes between 2016 and 2018



4. *Level of funding:* In 2018, all the FMUs in the network met the minimum criteria for FMG funding (level 1 = 6,000 patients) compared to 8 of the 18 in 2016. Addtionally, in 2018, six of the 18 clinics reached a higher funding level (4 to 9), compared to 2016 when only one reached funding level 4 (Figure 2).

FIGURE 2. Changes in the level of funding (according to the number of registered patients)



Improving timely access

1. *Shift to the AA scheduling system*: Two clinics had adopted the AA scheduling systems in 2015. Ten other FMUs had implemented AA by the end of 2016 (67%). While two additional clinics had implemented the change by 2018, most of the remaining clinics were either undertaking planning or discussing changes for the coming year. All clinics not using (or intending to use) AA used a "carved-out" model (Bennett and Baxley 2009: 52), with slots for urgent care in their regular scheduling. In 2018, 14 clinics were in advanced access, and most clinicians had signed on. In addition, eight clinics had implemented AA for residents; four more FMUs were planning to do so. The open schedule used in AA differed among FMUs: half opened their schedule two weeks at a time and the other half in either three- or four-week blocks. Five clinics had developed plans to balance patient needs (demand for appointments and services) and service offering (number of slots offered by the clinical team). Plans were under development in seven other FMUs. Moreover, seven clinics had developed algorithms to help administrative staff orient patient calls (e.g., who should a patient be referred to for a same-day appointment when their family physician was not available).
2. *Extending access to care after hours and on weekends and holidays:* In 2018, walk-in services were offered in 16 of the 18 clinics (89%). After-hours access to care and services during weekends remained stable for on-site services between surveys. Seven clinics could not offer extended access to care (weekends/evenings) on site and, therefore,

collaborated with another site to offer this service. Up to 94% of clinics provided after-hours access to care within their clinic. In 2018, clinics were open on a median of 12 hours on weekdays and four hours on weekends.

Communication with the PHC team

In 2018, 16 FMUs offered patients the opportunity to speak with professionals by phone to quickly address their one-time concern. Patients could expect a return call the same day. Each FMU had its own care pathway, which may be different from one clinic to another. The receptionist, according to the locally developed algorithm, may transfer the message to either a family physician or a nurse clinician depending on the reason for the call. The professional would return the call and decide if the telephone advice was sufficient or if an appointment with the best professional was required to complete the assessment of the patient's need. In 2016, leaving a message was offered by 10 clinics and was planned by three additional clinics. In 2018, 13 clinics were offering this service, and one was in the process of implementing it. E-mail communication was seldom used in 2016 (2/18) and barely increased by 2018 (4/18).

The third-next available appointment

The third-next available appointment was measured on an *ad hoc* basis in each FMU with each survey. In 2016, the delay was shorter for FMUs with AA scheduling systems (15.5 vs. 19.2 days for FMUs using traditional scheduling). The difference persisted in 2018, but both groups improved (11.2 vs. 15.3 days). The number of days to the third appointment was reduced for both staff clinicians and residents between surveys in AA clinics (Table 2). It should be noted that the 2016 measurement was made in the winter, whereas the 2018 measurement was made in the summer.

TABLE 2. Delay for the third-next available appointment according to the type of professional

Delay for the third-next appointment (Days) 17/18 FMUs	2016 Median (range)	2018 Median (range)
Staff physicians	15.9 (7.5–41)	12.3 (8.8–26.7)
Residents	17.7 (9.5–38.3)	11.95 (7.7–28.4)

ADEQUACY OF SERVICES AND INTERDISCIPLINARY COLLABORATION

Licensed practical nurses, professionals prioritized for funding in the FMG model, were absent in 2016; the median in 2018 was three full-time licensed practical nurses per clinic. The median number of full-time nurse clinicians increased from two to three between 2016 and 2018 (Table 1).

Interdisciplinary collaboration is an important element in increasing accessibility. It allows the delivery of care to the population to be optimized by complementary and more efficient use of the skills of different health professionals. It can take many forms, such as collective prescription (CP), which allows other health professionals to perform certain

activities reserved for the physicians. CPs cover the medications, treatments, examinations or care to be given, the circumstances in which they may be given and any contraindications. Québec allows a large number of CPs. However, only three CPs were adopted by a majority of the 18 FMUs – diabetes (13/18), hypertension (13/18) and dyslipidemia (11/18) – and almost no changes were observed between 2016 and 2018. Only a few FMUs were planning to implement additional CPs in the coming year.

IMPROVING BARRIERS TO ACCESS

In 2018, the majority of FMUs (78%) still lacked medical teaching staff or attending physicians (14/18). Their teams also lacked healthcare professionals (78%) and office staff (67%). Most lacked space (61%) to improve patient care and access to care. When asked about specific staffing needs, most mentioned medical staff not only for teaching (61%) but also for research (50%) and patient care (28%).

Discussion

Compliance with the requirements of Bill 20 (Barette 2015), as well as the changes mandatory for Québec FMUs to adopt the FMG model, has led to significant changes in the organization of clinics, which have had a positive impact on access to our network.

For several years, family physicians from FMUs have mobilized to adapt their service offerings to the requirements of the reform and the imposed FMG program, to improve accessibility. The University of Montreal's network of FMUs participated in this study to track the evolution of improved access to care while going through a turbulent period of transitions in 2016–2018. To our knowledge, no published studies have explored the changes experienced by clinical settings during the last reform.

The results of our study are not generalizable. However, the Department of Family Medicine and Emergency Medicine's process of monitoring changes would be. Indeed, it provides data that help determine whether the requirements of reforms or legislative demands are being met and allow a family medicine (FM) department to support clinics in achieving their goals. Moreover, an FM department or a clinic could continue to collect data and act on the results in a continuous quality improvement perspective. In order to better monitor the improvements in their access to care, new indicators could be privileged: the number of orphan patients and the number of vulnerable patients among them. Also, the regular recording of the time to the third available appointment would allow their data to be compared to the regional statistics used as benchmarks.

Availability and accommodation

Availability and accommodation refer to health services being sufficient and offered in a timely manner. Because FMG funding is based on the number of patients enrolled, it is possible that the increase in administrative and professional resources has been, and still is, an

incentive to enroll additional patients. However, government funding for FMGs does not provide for physical expansion of clinics, and lack of space may slow down and hinder the fulfillment of FMUs' clinical and academic missions.

In order to optimize accessibility, several clinics have adopted an AA scheduling system, which is associated with better patient-reported accessibility (Paré-Plante et al. 2018). A few clinics have also implemented AA for their residents even if it is more challenging in a PHC teaching setting (Hudon et al. 2019; Malham et al. 2018). Moreover, most clinics are offering walk-in type services and same-day appointments for more urgent care.

The third-next available appointment is a recognized and widely used measure of access (Rose et al. 2011). In our study, all FMUs reduced the time to the third-next appointment between surveys, and, as expected, delays were shorter for clinics using AA than intermediate type of scheduling (inserting more slots for urgent care) (Bennet and Baxley 2009). However, this result should be interpreted with caution as this measurement was made only once in our study.

Adequacy of services and challenges to improving access

This reform has contributed to the improvement of accessibility in the FMUs. Two main indicators are held over the heads of clinicians to remind them to check whether they are meeting their targets. The first indicator used by the Ministère de la Santé et des Services sociaux (MSSS) is the percentage of the population enrolled with a family physician (targeted by Bill 20 to 85%). For this indicator, clinics had no control on their performance other than verifying the regional percentage of patients registered on the centralized waiting list (Breton et al. 2014). After five years, it has still not reached its objective as, according to the latest MSSS publication (MSSS 2021), 80.8% of people were registered with a family physician.

The second indicator is the attendance or assiduity rate with a family physician (targeted by Bill 20 at 80%) defined as the percentage of visits of a patient to his family physician or another physician at the same clinic out of the total healthcare visits (to any other clinic or emergency department) during the last year. At least each clinic received their assiduity rate and could try to act on it. Assiduity met the target and even surpassed it, reaching 84% (MSSS 2021).

Champagne et al. (2018) noted that these two indicators have slightly improved between 2015 and 2017. However, they pointed out that these indicators cannot provide a clear picture of accessibility. These two indicators do not address the multiple causes involved in the lack of access to care. Rubenstein et al. (2020) identified eight key priorities for improving access management, six of which involve organizational structures: (1) interdisciplinary PHC site leadership, (2) clearly identified group practice management structure, (3) telephone management of patients, (4) contingency staffing, (5) managing nurses' demands through care coordination and (6) proactive demand management by optimizing provider visit schedules. Several changes observed in Québec's FMUs related to these targets appear to increase the likelihood of improving patient access to care.

In a study comparing new models, such as the FMG model, with more traditional models of care, patients reported easier access to other physicians in the same clinic even if they declared that they could see their own doctor more often in traditional models of care (Miedema et al. 2016). The FMG model predisposes to the development of a team service offer often referred to team-based care, which requires that a minimum of two professionals or healthcare providers work in a collaborative way and share goals and decisions with the patient (Mitchel et al. 2019). One of the keys is by increasing interdisciplinary collaboration. The increase in the number of registered patients will lead to an increase in chronic diseases at follow up. Strategies, such as the development of CPs and more effective interdisciplinary working (Jacobson and HDR Inc. 2012), as well as respecting the autonomy of professionals by allowing them to respond directly to patients' needs without medical referral would improve timely access. In a systematic review of interventions to reduce wait times, AA and the presence of nurses and nurse practitioners were identified as promising measures (Ansell et al. 2017). In the network, there is still room for improvement in terms of managing interdisciplinary follow up, increasing the number of CPs and sharing the call management algorithms that work best. With more time, we expect FMUs will consolidate collaborative teamwork, share tools across FMUs (e.g., algorithms for patient triage), improve timeliness of care and expose more medical residents to best care and role models (Ansell et al. 2017).

Study limitations

This cross-sectional design provides only a snapshot of the situation. However, the repeated measurement over a period of 18 months, as well as the enriched selection of response to some questions provided insight into the clinics' plans for change, as well as the current situation.

In our study, the third-next available appointment was the indicator chosen to measure accessibility to family physicians as it is considered in many studies. Serial measures over time would have provided a more accurate assessment of access. Our comparison of measurements taken 18 months apart, one in winter and one in summer, likely does not reflect team adaptation or improvement. Moreover, this indicator alone cannot truly measure accessibility in primary care because it does not take into account interdisciplinary work. Many patients with chronic diseases are followed up by a healthcare team. Thus, the third available appointment may underestimate follow up at the clinic.

The development of an indicator that takes this teamwork into account would allow for better measurement of real access to care.

Strength of the study

The participation of all 18 FMUs affiliated with the University of Montreal allowed us to draw a good picture of the changes introduced and improvements achieved in the network. The development of a questionnaire with answers allowing for tracking of changes over time,

made it possible to draw a dynamic picture of current and future structural changes in clinical practice. It allowed the Department of Family Medicine and Emergency Medicine and each clinic to see the deployment of measures over time to increase accessibility. Each clinic was able to check on what was previously planned and whether it was achieved.

Conclusion

This study's results reveal that the latest policy reform and imposed FMG program stimulated clinics to commit to changes in a short period of time. The response of the FMU network, despite the added challenges, such as the teaching mission, has been dynamic as FMUs have adapted to the major changes and continue to actively improve access to care for their communities. Despite this, the goal set by the MSSS of getting 85% of the population of the province registered with a family physician is still not being met. Challenges still remain regarding work on key priorities for improving access management.

Comprehensive plans to evaluate the implementation of future reforms should be developed and included in the rollout.

Future research using stronger methods could develop a better measurement of access and determine whether improved access not only reduces the number of orphan patients but also impacts outcomes, such as preventable hospitalizations and emergency department utilization.

An ongoing study of patients' perspectives of access to care will identify additional solutions to better address unmet health needs.

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