# Patients' missed appointments in academic family practices in Quebec

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## Abstract

**Objective** To determine the prevalence of no-show patients in 4 family medicine teaching units (FMTUs) and to investigate the reasons given by patients for past missed appointments in order to identify factors that could be acted on to improve access to care.

**Design** Retrospective data collection through electronic medical records and a self-administered survey.

**Setting** Four FMTUs at the University of Montreal in Quebec.

**Participants** Patients older than 18 years of age (or younger patients' guardians) who were able to read French and had visited the clinic at least once.

**Main outcomes measures** No-show prevalence among patients scheduled to see different types of health care professionals, and patients' reasons for past missed appointments and for not notifying the clinic before missing an appointment.

**Results** The overall prevalence of no-show patients was 7.8% (2700 missed appointments of 34 619 scheduled appointments), ranging from 6.3% to 9.0% among the 4 FMTUs. The survey participation rate was 91.0% (1757 completed surveys of 1930 distributed surveys). A total of 19.1% of respondents acknowledged previous no-show behaviour. Resolved issues (22.9%) and work obligations (19.4%) were the most frequent personal reasons for missing an appointment, whereas inconvenient timing of the appointment (17.0%), delay before the appointment (14.6%), and lack of confirmation (13.7%) were the most frequent organizational reasons. The most frequent reason for not notifying the clinic of the absence was forgetting to call (55.2%).

**Conclusion** The no-show phenomenon, although not very prevalent in our clinics, is present and can potentially affect access to care. Reasons for missing an appointment without notifying the clinic are varied and point toward different potential solutions to reduce no-shows. Educating patients about the importance of informing the clinic when they cannot come, offering a wider range of appointment dates and times, systematically confirming appointments, improving telephone service, and offering different methods to communicate with the clinic could all be solutions to improve access to care.

## Editor's key points

- The overall prevalence of no-show patients according to electronic medical record data for the 4 family medicine teaching units (FMTUs) in this study was 7.8% (2700 missed appointments of 34 619 scheduled appointments).
- Overall, 19.1% of respondents (335 of 1757) to the survey the authors conducted acknowledged previous no-show behaviour. Reasons are presented in 2 categories, personal and organizational. Resolved issues (22.9%) and work obligations (19.4%) were the most frequent personal reasons, whereas inconvenient timing of the appointment (17.0%), delay before the appointment (14.6%), and lack of confirmation (13.7%) were the most frequent organizational reasons. The most frequent reason for not notifying the clinic of the absence was forgetting to call.
- The no-show issue is complex and has a considerable effect on access to the health care system and providing learning opportunities in FMTUs. Reasons for missing an appointment without notifying the clinic are varied. Offering each FMTU their personalized results will help them develop and implement personalized options based on the reasons given by their patients.

## Points de repère du rédacteur

- Selon les données des dossiers médicaux électroniques des 4 unités d'enseignement de la médecine familiale (UEMF) dans cette étude, la prévalence globale des patients qui ne se sont pas présentés à leur rendez-vous se situait à 7,8 % (2700 rendez-vous manqués sur 34 619 rendez-vous à l'horaire).
- Dans l'ensemble, 19,1 % des répondants (335 sur 1757) au sondage qu'ont effectué les auteurs ont reconnu avoir eu antérieurement un comportement d'absentéisme à leurs rendez-vous. Les motifs sont présentés en 2 catégories, notamment des raisons personnelles et organisationnelles. La disparition du problème (22,9 %) et les obligations professionnelles (19,4 %) étaient les raisons personnelles les plus fréquentes, tandis que sur le plan des motifs organisationnels, les plus fréquents évoqués étaient le moment peu propice du rendez-vous (17,0 %), le temps d'attente avant le rendez-vous (14,6 %) et l'absence de confirmation (13,7 %). La raison la plus fréquente de ne pas avoir averti la clinique de l'absence était l'oubli de téléphoner.
- Le problème des rendez-vous manqués est complexe, et il a un impact considérable sur l'accès au système de santé et les possibilités d'apprentissage dans les UEMF. Les motivations derrière l'absence à un rendez-vous sans avis à la clinique sont variées. La présentation à chaque UEMF de ses propres résultats les aidera à élaborer et à mettre en œuvre des solutions personnalisées en fonction des raisons exprimées par leurs patients.

# Rendez-vous manqués par des patients dans les groupes de médecine de famille universitaires au Québec

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## Résumé

**Objectif** Déterminer la prévalence des rendez-vous manqués par des patients dans 4 unités d'enseignement de la médecine familiale (UEMF), et examiner les raisons données par les patients de ne pas s'être présentés à leurs rendez-vous par le passé afin de cerner les facteurs pour lesquels des mesures peuvent être prises pour améliorer l'accès aux soins.

**Type d'étude** Collecte rétrospective de données au moyen des dossiers médicaux électroniques et questionnaire à remplir soi-même.

**Contexte** Quatre UEMF à l'Université de Montréal (Québec).

**Participants** Les patients de plus de 18 ans (ou les adultes responsables des plus jeunes patients) qui étaient capables de lire en français et étaient venus à la clinique au moins 1 fois.

**Principaux paramètres à l'étude** La prévalence des rendez-vous manqués par des patients qui étaient prévus à l'horaire pour voir différents types de professionnels de la santé, et les raisons motivant l'absence des patients à leur rendez-vous et leur omission d'avertir la clinique de leur absence.

**Résultats** La prévalence globale des patients absents à leurs rendez-vous était de 7,8 % (2700 rendez-vous manqués sur 34 619 prévus à l'horaire), variant de 6,3 à 9,0 % au sein des 4 UEMF. Le taux de participation au sondage était de 91,0 % (1757 questionnaires remplis sur 1930 distribués). Au total, 19,1 % des répondants ont reconnu avoir antérieurement eu un comportement d'absentéisme. La disparition du problème (22,9 %) et les obligations professionnelles (19,4 %) étaient les raisons personnelles les plus fréquentes expliquant les rendez-vous manqués, tandis que sur le plan des raisons organisationnelles, le moment peu propice du rendez-vous (17,0 %), le temps d'attente avant le rendez-vous (14,6 %) et l'absence de confirmation (13,7 %) étaient les plus nombreuses. La raison la plus fréquente de ne pas avoir averti la clinique de l'absence était l'oubli de téléphoner (55,2 %).

**Conclusion** Le phénomène des rendez-vous manqués, quoiqu'il ne soit pas très prévalent dans nos cliniques, est quand même présent, et il peut potentiellement nuire à l'accès aux soins. Les motifs de l'absence aux rendez-vous sans avis à la clinique sont variés, et ils pointent vers différentes solutions potentielles pour réduire ces absences. L'éducation des patients à propos de l'importance d'informer la clinique quand ils ne peuvent pas se présenter, la proposition de plages plus larges de dates et d'heures de rendez-vous, la confirmation systématique des rendez-vous, l'amélioration du service téléphonique et l'offre de différents modes de communication avec la clinique figurent toutes parmi des solutions pour améliorer l'accès aux soins.

In Quebec, even though 79% of patients are registered with a family doctor, timely access to primary care physicians remains problematic.[1,2] Non-attendance at scheduled appointments, or no-shows, is one of the factors that can potentially reduce access to care by increasing wait times.[3,4] A *no-show* is usually defined as a missed appointment not canceled[5-12] or canceled belatedly up to a few days before.[13] No-shows affect clinic efficiency, reducing appointment availability for other patients and increasing the economic burden associated with health care costs.[13-15] They also negatively affect patients' health issues.[9,16-20] Furthermore, in family medicine teaching units (FMTUs), no-show patients reduce learning opportunities for residents.[13]

The few studies reporting no-show prevalence in family medicine are mostly in American settings. Prevalence ranges from 7% to 26% in academic settings[9-11,13,21] and 16.5% to 23% in non-academic settings.[5-8,12] It also varies depending on the type of professional visited,[9,11,13] with faculty physicians generally having a lower prevalence of no-shows (3% to 20%) than residents (7% to 28%) and nurse practitioners (21.5%) do. To our knowledge, no published study has been conducted in academic Canadian family medicine practices.

Patient characteristics often reported in no-show studies were young age, low socioeconomic status, multiple comorbidities, and a history of missed appointments.[9,10,21-23] Reasons for missing an appointment are diverse and vary from one study to another. However, some reasons are more often reported, such as forgotten appointments (27% to 49%), transportation problems (2% to 21%), family or professional obligations (3% to 25%), the patient being too sick to attend or being hospitalized (2% to 24%), appointment time not being appropriate (29%), difficulty canceling the appointment (29%), and miscommunication (32%).[8,24-27]

The primary objectives of this study were to determine the prevalence of no-show patients among physicians, residents, and other health care professionals within 4 FMTUs and to investigate the reasons given by patients for past missed appointments. Secondary objectives were to explore whether there are differences between patients who miss appointments and patients who attend with regard to sociodemographic characteristics, level of satisfaction with the clinic, and preferences for appointment taking. The goal is to identify innovative ways the clinics can lower no-show prevalence and therefore try to improve access to care.

## Methods

### Study design and settings

This observational descriptive study was conducted within 4 FMTUs in the Department of Family Medicine and Emergency Medicine at the University of Montreal in Quebec. An FMTU is a family medicine clinic affiliated with a university, where training from a variety of health care professions is provided for medical residents and students. The 4 FMTUs in this study differ by geographic location (rural, semiurban, and urban), the number of patients followed (850 to 13 000), and the number of health care professionals at each clinic (**Table 1**).

### Data sources

No-show prevalence was determined by conducting a retrospective data extraction from electronic medical records between July 1 and December 31, 2016. Patients were considered no-shows if they missed an appointment with day-of or no notification. The data collection was done by a staff member of each clinic. A Microsoft Excel spreadsheet was created to collect and process the data. Data collection was standardized through training provided by a member of the research team (M.C.T.) to each clinic. The variables extracted for each missed appointment included the date, health care professional visited (physician, first- or second-year resident, nurse practitioner, nurse, or another professional such as a physiotherapist, nutritionist, or pharmacist), and patient sex and age. No-show prevalence was calculated by dividing the number of no-show patients by the total number of scheduled patients for the period. A member of the research team manually validated 20% of the data to ensure greater than 80% accuracy.

Reasons for missing an appointment without notification were investigated by distributing a self-administered written survey to patients in the waiting room at each FMTU between February and June 2017. Eligible patients were older than 18 years of age and able to read French. Guardians and parents of patients younger than 18 years of age could complete the survey on their behalf. Patients were excluded if it was their first visit to the clinic or if they had already completed the survey. The survey had 20 questions: description of the actual visit (4 questions); satisfaction with telephone accessibility (4 questions), time in the waiting room (1 question), and clinic services (1 question); past no-show experience (3 questions); preferences for timing and confirmation of the appointment (3 questions); sociodemographic factors (3 questions); and an open-ended

**Table 1. No. of attending professionals among the 4 FMTUs**

| HEALTH CARE PROFESSIONAL | RANGE AMONG FMTUs, N |
|---|---|
| Physicians | 0-22 |
| Residents | 9-28 |
| Nurse practitioners | 0-2 |
| Nurses | 1-4 |
| Other professionals* | 0-7 |

FMTU—family medicine teaching unit.
*The other professionals (physiotherapists, nutritionists, and pharmacists) were only present at 1 of the 4 clinics.

question asking for suggestions on how to reduce no-shows. Patients who remembered being no-shows within the past 2 years were asked to identify all their reasons for non-attendance from a series of statements based on the relevant literature and reasons for not notifying the clinic from a provided list. The research team, research collaborators from each clinic, and a patient reviewed the questionnaire to ensure the language was appropriate and the choices provided were applicable to every clinic. Members of the research team validated the data obtained from the surveys (J.C., M.A., I.R., M.C.T.).

## Statistical analyses

Prevalence of no-shows was calculated for the whole population and for each FMTU, according to different groups of professionals and the month of the appointment.

Survey sample size was estimated at 380 completed surveys with no-show experience for the 4 sites (confidence interval at 95%, $P=.05$). Based on an estimated participation rate of 50% and a no-show rate of 20%, each FMTU would have to distribute approximately 1000 surveys to obtain 95 no-show surveys.

Baseline characteristics of all patients were described using frequencies and percentages. Prevalences were compared according to professional group, and baseline characteristics and preferences were compared between attending and no-show patients using $\chi^2$ testing. Data were analyzed using SPSS, version 25.

## Ethics approval

This study was approved by the ethics committees of both the Integrated Health and Social Services Centre of Laval in Quebec and the University of Montreal.

# Results

## Prevalence of no-shows

The overall prevalence of no-show patients for the 4 FMTUs was 7.8% (2700 missed appointments of 34 619 scheduled appointments) (**Table 2**). Prevalences among the 4 FMTUs ranged from 6.3% to 9.0%. The no-show prevalence for nurses was the lowest. The prevalence among family physicians was lower than that among residents ($P<.05$). The differences in prevalences were also significant between family physicians and residents and other professionals (physiotherapists, nutritionists, and pharmacists) ($P<.05$). Non-attendance by month follows the same trend for each of the 4 FMTUs, showing peaks in July, September, and December.

## Survey results

A total of 1757 surveys were completed of 1930 surveys distributed in the 4 FMTUs, for a participation rate of 91.0% (range 85.3% to 99.0%).

**Table 2. Prevalence of no-shows overall and by type of professional**

| CATEGORY | PREVALENCE OF NO-SHOWS (RANGE AMONG FMTUs), % |
|---|---|
| Overall | 7.8 (6.3-9.0) |
| Professional | |
| • Physicians | 6.8 (4.8-7.8) |
| • Residents | 10.2 (8.3-11.7) |
| • Nurse practitioners | 6.9 (2.0-10.0) |
| • Nurses | 6.0 (3.2-10.0) |
| • Other* | 19.3 (NA) |

FMTU—family medicine teaching unit, NA—not applicable.
*The other professionals (physiotherapists, nutritionists, and pharmacists) were only present at 1 of the 4 clinics.

## Respondent characteristics

Compared with the attending group, patients in the no-show group were younger (63% vs 55% younger than 50 years of age, $P<.001$) and more often considered their health to be fair or bad (20% vs 14%, $P=.04$). No difference was observed for sex (72% vs 71% women, $P=.88$).

## Reasons for missing an appointment

Overall, 19.1% of respondents (335 of 1757) acknowledged previous no-show behaviour. Reasons are presented in 2 categories, personal and organizational, to help identify the reasons for no-shows that could be improved by the clinic. Each reason presented was chosen at least once, with proportions ranging from 3.5% to 22.9% (**Table 3**). Resolved issues (22.9%) and work obligations (19.4%) were the most frequent personal reasons, whereas inconvenient timing of the appointment (17.0%), delay before the appointment (14.6%), and lack of confirmation (13.7%) were the most frequent organizational reasons. The most frequent reason for not notifying the clinic of the absence was forgetting to call (**Table 4**). Another 14.1% of patients tried to call but could not reach anyone.

## Patient satisfaction and preferences

The overall satisfaction is significantly lower in the no-show group ($P<.001$); 24.6% of them rated the service good or fair compared with 14.9% of those who did not miss appointments. In addition, the no-show group were more likely to report they waited a long time on the telephone before they talked to someone and that they had waited a long or very long time in the waiting room (**Table 5**).

Moreover, patients who have already missed an appointment are more likely to express a preference for the time of the appointment and almost all wanted confirmation of their appointment. No difference was observed between the 2 groups regarding the way to confirm the appointment (telephone, e-mail, or SMS [short message service]), both groups preferring a telephone call from a member of the clinic (**Table 6**).

**Table 3.** Personal and organizational reasons reported by patients for missing an appointment without notifying the clinic

| REASON | % |
|---|---|
| Personal | |
| • Resolved issue | 22.9 |
| • Work obligation | 19.4 |
| • Consultation elsewhere | 15.8 |
| • Transportation problem | 15.2 |
| • Family obligation | 14.6 |
| • Too sick | 14.0 |
| • Afraid of receiving a bad result | 4.0 |
| • Afraid to do a test | 3.8 |
| Organizational | |
| • Inconvenient timing of the appointment | 17.0 |
| • Long lead time | 14.6 |
| • Lack of confirmation | 13.7 |
| • Appointment not with preferred provider | 8.3 |
| • Confirmation too late | 6.5 |
| • Appointment perceived as unnecessary | 3.5 |

**Table 4.** Reasons reported by patients for not notifying the clinic of their absence

| REASON | % |
|---|---|
| Forgot to call | 55.2 |
| Unable to talk to someone by telephone | 14.1 |
| Think it is unnecessary | 9.0 |
| Unable to leave a message | 5.5 |
| Never call when absent | 3.6 |

## Discussion

To our knowledge, this is the first published study conducted in academic settings (FMTUs) in Canada that determined the prevalence of patients who do not attend their appointments with different groups of professionals (physicians, residents, nurses, and other health professionals) and that investigated the reasons for these absences. The overall prevalence found in our study (7.8%) is close to the lower limits of prevalences reported in other studies conducted in academic settings.[9-11,13,21] One of the 4 clinics had a lower no-show rate for physicians that influenced the overall rate. The prevalence for physicians and nurse practitioners was similar, and both prevalences were lower than that for residents, although the difference was not significant. Similar trends were found for physicians in other studies comparing professionals in FMTUs.[9,11,13] Clinical nurses have the lowest no-show prevalence, although it is not significantly different from those for physicians or nurse practitioners. The increased no-show prevalence in residents might be explained by the discontinuity of their practices owing to their academic program, which affects their availability.[9,22,28,29] Although based on only 1 clinic, our results suggest that the prevalence of no-shows for other professionals is significantly higher than in other groups. This could be explained by the fact that these appointments are often recommended and booked by physicians rather than being the patient's choice. A recent systematic review reports that no-shows seem to be higher for physiotherapists,[30] but no study was found for nutritionists or pharmacists. Other studies are needed to confirm this result.

When prevalence is plotted by month, 3 of the 4 FMTUs follow the same trend, with higher no-show prevalence in July, September, and December. Events occurring during these months (construction holiday, start of the school year, and Christmas, respectively) could explain this higher non-attendance. Although some studies have reported lower attendance in summer and winter months,[6,31-34] a recent systematic review reported that the appointment month was not a significant no-show predictor in most studies.[30]

Reasons selected by patients for missing appointments are similar to those in other studies.[8,24-27] However, it is hard to compare these to our study, as the categorization of the reasons to miss an appointment was different in each study. By dividing the reasons into 2 categories, our study highlights that many reasons are related to clinic organization, and this could lead to possible clinic improvements to increase access to care. Optimizing the appointment schedule is a potential solution, as the 2 most cited reasons for no-shows in this category were time of and delay before appointments. As only a small proportion of our population indicated a preference for evening or weekend appointments, instead of extending opening hours, we should adapt the current schedule. A possible solution is an advanced access system. In a 2017 systematic review,[35] lead time and no-show rates were shown to decrease after the implementation of open-access scheduling in primary care settings.

Furthermore, implementing a timely confirmation system before appointments should be explored, as more than 90% of no-show patients reported this preference. In a 2016 systematic review by McLean et al,[36] it was found that all types of reminders were effective at reducing non-attendance. The choice of system should be tailored to the service and the population.[37] For example, in a study where patients were younger (mean age of 31 years), a text messaging reminder system was preferred.[26] Some electronic medical record systems send an automatic reminder by e-mail and might be a preferred option for patients using this type of communication. In our study, where patients were older, the preferred method of communication was the telephone. An appointment confirmation

**Table 5.** No-show and attending patients' opinions on telephone communication and the clinic

| OPINION | NO-SHOW, % | ATTENDING, % | *P* VALUE |
|---|---|---|---|
| **Telephone communication** | | | |
| Short wait time on the line | 52.0 | 59.8 | .03 |
| Easy to navigate the call system to reach the front desk | 57.1 | 66.9 | .01 |
| Easy to hear the message | 91.6 | 96.7 | < .001 |
| Easy to follow the instructions | 92.7 | 93.0 | .31 |
| Easy to note information | 81.9 | 90.1 | < .001 |
| **Clinic** | | | |
| Delay in the waiting room | | | .01 |
| • Very long or long | 15.9 | 9.5 | |
| • Reasonable | 64.9 | 65.3 | |
| • Very short or short | 19.2 | 25.2 | |
| General satisfaction | | | < .001 |
| • Excellent or very good | 75.5 | 85.1 | |
| • Good or fair | 24.6 | 14.9 | |

**Table 6.** No-show and attending patients' preferences for appointment time and confirmation

| PREFERENCE | NO-SHOW, % | ATTENDING, % | *P* VALUE |
|---|---|---|---|
| Best time for an appointment | | | .01 |
| • Morning | 43.2 | 35.0 | |
| • Afternoon | 24.8 | 20.0 | |
| • Evening | 19.0 | 18.0 | |
| • Weekend | 13.9 | 12.6 | |
| • No preference | 23.6 | 32.9 | |
| Confirmation of the appointment | | | < .001 |
| • 1, 2, or 3 d before appointment | 91.7 | 75.1 | |
| • No need for confirmation | 8.2 | 24.9 | |
| Best way to confirm | | | .06 |
| • Telephone | 72.5 | 67.0 | |
| • Short message service | 26.8 | 30.8 | |
| • E-mail | 23.6 | 25.7 | |

could also help patients remember to call to cancel, as more than half of the patients had forgotten to do so in the past. The advanced access system might also alleviate this problem, as confirmation might be unnecessary with the ability to schedule appointments more quickly.

Finally, as 14.1% of patients did attempt to cancel but could not reach anyone and 5.5% could not leave a message, improving telephone services and using other communication methods (e-mail, SMS, etc) are potential solutions to reduce no-shows in our clinics.

This study showed that personal reasons are more often cited to explain an absence from an appointment. Although it is not possible to act directly on the reasons given by patients (eg, transportation, family, work) to reduce the prevalence of no-shows, the clinic can make patients aware of the importance of notifying the clinic in advance so that the clinic can offer the appointment to another patient. Raising awareness among patients is important, as around 13% of patients think canceling is unnecessary or routinely do not cancel. Finally, anticipatory fear and anxiety about both procedures and bad news, although this reason was given less often in our study, is reported in the literature[24] and is a reminder to explore these issues with our patients.

Moreover, in our study, no-shows were generally less satisfied and found telephone communications harder than their counterparts who did attend. As these patients were younger, they had more issues related to missing school or work or having young children and might prefer other communication modes. This could explain their criticisms regarding waiting on the telephone to either make or cancel an appointment. To our knowledge, no study has specifically studied the relationship between no-show patients and their satisfaction with the clinic. However, one study did report that certain patients did not feel obligated to attend their appointment in part because they thought their time and beliefs were disrespected by the health care system, a feeling aggravated by their lack of understanding of the scheduling system.[24] Other studies need to be done to better comprehend this association.

## Strengths and limitations

Strengths of our study include the large total numbers of appointments and completed surveys, and the recruitment within 4 FMTUs in different geographic areas, which ensured our results could be more generalizable. For the survey, having participants not only indicate their reasons for non-attendance but also allowing them to indicate their opinions on how to improve the no-show rate, their preferences, and their satisfaction with the clinic increased the usefulness and relevance of our findings. Each participating clinic can implement personalized changes to increase access to care.

This study also had limitations. First, the extracted data used to establish the no-show prevalence were manually validated for no-show patients but not for patients who attended their appointments, so the no-show rate might be slightly underestimated. Moreover, the reasons why patients missed appointments were identified using a questionnaire that required patients to refer to past events. Recall bias and nonreporting bias might have been introduced, which could have led

to an underestimation of reported no-show experience. However, we believe that these biases were not numerous enough to affect the validity of the results. Another limitation is that the survey was not validated. To compensate for this gap, the research team and a patient reviewed it to ensure the questions were clear, and that the listed reasons for missing an appointment were relevant, comprehensive, and easy to understand (face validity). The survey was only available in French. Although this means that a subgroup of our population was potentially excluded, the high participation rate (91.0%) allows us to believe that this would probably not have affected our results. Additionally, it would have been interesting to ask patients which health care professional they were scheduled to meet on their missed appointment, to identify differences in reported reasons, and to determine whether patients' reported no-show prevalence resembles the data collected in the first part of the study. Cost could have been added to the list of reasons for no-shows. Medical visits in Canada are covered by the Medicare system, but parking and transportation costs are not. Finally, owing to the study setting (4 different FMTUs), there might have been selection bias during the distribution of questionnaires by front-desk personnel. Survey instructions indicated that every patient be asked to participate, but during busy hours, this might not have been feasible.

## Conclusion

The no-show issue is complex and has a considerable effect on access to our health care system and providing learning opportunities in FMTUs. This study evaluated the extent of this phenomenon in 4 academic clinics in Quebec. Reasons for missing an appointment without notifying the clinic are varied and point toward different potential solutions to reduce no-shows. Offering each FMTU their personalized results will help them develop and implement personalized options based on the reasons given by their patients. We believe reporting our results will also be important to other academic or non-academic clinics that aim to improve accessibility and learning opportunities for students. It would be interesting to repeat certain aspects of this study in each FMTU after implementing solutions to see whether there is improvement in no-show prevalence and access to clinics.

**Dr Claveau** was a resident in the Department of Family Medicine and Emergency Medicine at the University of Montreal in Quebec at the time of the study. **Drs Authier** and **Rodrigues** are Associate Clinical Professors, both in the Department of Family Medicine and Emergency Medicine at the University of Montreal. **Dr Crevier-Tousignant** was a resident in the Department of Family Medicine and Emergency Medicine at the University of Montreal at the time of the study.

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**Contributors**

All authors participated in development of the research question, development of the protocol, and the submission to the ethics committees of the Integrated Health and Social Services Centre of Laval and of the University of Montreal. All authors participated in the analysis of the results. **Dr Claveau** led the writing of the manuscript and all authors participated in revision of the manuscript.

**Competing interests**

None declared

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