### Canadian Medical Education Journal Revue canadienne de l'éducation médicale



### Educating future physicians for francophone official language minority communities in Canada: A case study Formation de futurs médecins pouvant servir les communautés francophones en situation minoritaire au Canada : une étude de cas

### Brett Schrewe 💿, Tatiana Yeuchyk, Melanie El Hafid 💿 et Joyce Nyhof-Young

Volume 14, numéro 6, 2023

URI : https://id.erudit.org/iderudit/1108922ar DOI : https://doi.org/10.36834/cmej.75300

Aller au sommaire du numéro

Éditeur(s)

Canadian Medical Education Journal

ISSN 1923-1202 (numérique)

Découvrir la revue

#### Citer cet article

Schrewe, B., Yeuchyk, T., El Hafid, M. & Nyhof-Young, J. (2023). Educating future physicians for francophone official language minority communities in Canada: A case study. *Canadian Medical Education Journal / Revue canadienne de l'éducation médicale*, 14(6), 20–30. https://doi.org/10.36834/cmej.75300

#### Résumé de l'article

Contexte : Plus d'un million de Canadiens francophones vivent dans des communautés de langue officielle en situation minoritaire (CLOSM) hors Québec. L'accessibilité de soins linguistiquement appropriés aux CLOSM est limitée. Par conséquent, la qualité des services qui leur sont offerts en souffre. Le programme FrancoDoc a été créé en 2015 pour aider à combler cette lacune sur le plan de l'équité en matière de santé. Il vise à offrir aux étudiants en médecine francophones ou francophiles dont l'anglais est la principale langue d'enseignement les moyens d'améliorer leurs compétences en français médical. Cependant, on sait peu de choses sur les possibilités et les limites de cette initiative éducative.

Méthodes : Notre étude qualitative instrumentale de cas unique a exploré les expériences des participants au programme FrancoDoc, tout en examinant les facteurs qui influencent la prestation de services de santé linguistiquement appropriés aux CLOSM. Nous avons mené des entrevues semi-structurées avec des étudiants en médecine de tout le Canada et nous en avons analysé le contenu thématiquement en utilisant une approche réflexive et inductive.

Résultats : Quatre thèmes principaux ont été dégagés des 12 entrevues réalisées : les facteurs facilitant l'apprentissage du français; les obstacles à l'apprentissage du français; les facteurs contextuels influençant la prestation de soins de santé linguistiquement appropriés; et les recommandations visant à améliorer l'enseignement en soins de santé de manière à préparer les apprenants à servir les CLOSM.

Conclusions : Bien que très motivés par le programme FrancoDoc, les étudiants participants se heurtent à des obstacles comme les contraintes de temps, la programmation irrégulière des activités, le manque d'occasions d'apprentissage clinique régulier et la réticence des facultés de médecine. Or, pour remplir leurs obligations envers les CLOSM qu'elles servent, il est essentiel que les facultés de médecine reconnaissent la langue comme un déterminant social spécifique de la santé et qu'elles offrent un soutien solide aux initiatives comme le programme FrancoDoc.

© Brett Schrewe, Tatiana Yeuchyk, Melanie El Hafid et Joyce Nyhof-Young, 2023 Ce document est protégé par la loi sur le droit d'auteur. L'utilisation des



erudit

Ce document est protégé par la loi sur le droit d'auteur. L'utilisation des services d'Érudit (y compris la reproduction) est assujettie à sa politique d'utilisation que vous pouvez consulter en ligne.

https://apropos.erudit.org/fr/usagers/politique-dutilisation/

#### Cet article est diffusé et préservé par Érudit.

Érudit est un consortium interuniversitaire sans but lucratif composé de l'Université de Montréal, l'Université Laval et l'Université du Québec à Montréal. Il a pour mission la promotion et la valorisation de la recherche.

https://www.erudit.org/fr/

# Educating future physicians for francophone official language minority communities in Canada: a case study Formation de futurs médecins pouvant servir les communautés francophones en situation minoritaire au Canada : une étude de cas

Brett Schrewe,<sup>1</sup> Tatiana Yeuchyk,<sup>2</sup> Melanie El Hafid,<sup>3</sup> Joyce Nyhof-Young<sup>2,4</sup>

<sup>1</sup>Department of Pediatrics, Faculty of Medicine, University of British Columbia, British Columbia, Canada; <sup>2</sup>Department of Family and Community Medicine, University of Toronto, Ontario, Canada; <sup>3</sup>Department of General Surgery, University of Saskatchewan, Saskatchewan, Canada; <sup>4</sup>Women's College Hospital, Ontario, Canada

Correspondence to: Brett Schrewe, P. A. Woodward Instructional Resources Centre (IRC), 429 – 2194 Health Sciences Mall, Vancouver, BC Canada V6T 1Z3; email: <a href="https://www.bc.ca">brett.schrewe@cw.bc.ca</a>

Edited by: Tim Dubé (section editor); Christina St. Onge (senior section editor); Marcel D'Eon (editor-in-chief)

Published ahead of issue: Jun 19, 2023; published: Dec 30, 2023. CMEJ 2023, 14(6) Available at https://doi.org/10.36834/cmej.75300

© 2023 Schrewe, Yeuchyk, El Hafid, Nyhof-Young; licensee Synergies Partners. This is an Open Journal Systems article distributed under the terms of the Creative Commons Attribution License. (<u>https://creativecommons.org/licenses/by-nc-nd/4.0</u>) which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is Accessed on.

# Abstract

**Background:** Over one million Francophone Canadians live in official language minority communities (OLMC) outside of Québec. Availability and accessibility of linguistically appropriate care to these OLMCs is lacking, resulting in poorer quality of care. To help address this health equity gap, the FrancoDoc program was created in 2015 to identify Francophone/Francophile medical students enrolled at medical faculties that use English as their primary language of instruction and equip them with skills to increase their medical French abilities. Little is known, however, about the affordances and limitations of this educational endeavour.

**Methods:** Our qualitative instrumental single case study explored participants' experiences with FrancoDoc, while also examining factors shaping the delivery of linguistically appropriate healthcare services to OLMCs. We conducted semi-structured interviews with medical students from across Canada and thematically analyzed these using a reflexive, inductive approach.

**Results:** Four main themes were derived from 12 interviews: factors facilitating French language learning; barriers to French language learning; contextual factors shaping linguistically appropriate healthcare provision; and recommendations to improve healthcare education to better prepare learners to provide care to OLMCs.

**Conclusions:** Medical student participants are highly motivated to engage in educational activities linked to FrancoDoc. Their efforts are nonetheless frequently impeded by barriers such as time constraints, irregular event programming, lack of regular clinical learning opportunities, and lukewarm support from faculties of medicine. If medical faculties are to realize their obligations to the OLMCs that they serve, recognition of language as a specific social determinant of health and more robust institutional supports for initiatives like FrancoDoc are paramount.

# Résumé

**Contexte :** Plus d'un million de Canadiens francophones vivent dans des communautés de langue officielle en situation minoritaire (CLOSM) hors Québec. L'accessibilité de soins linguistiquement appropriés aux CLOSM est limitée. Par conséquent, la qualité des services qui leur sont offerts en souffre. Le programme FrancoDoc a été créé en 2015 pour aider à combler cette lacune sur le plan de l'équité en matière de santé. Il vise à offrir aux étudiants en médecine francophones ou francophiles dont l'anglais est la principale langue d'enseignement les moyens d'améliorer leurs compétences en français médical. Cependant, on sait peu de choses sur les possibilités et les limites de cette initiative éducative.

**Méthodes** : Notre étude qualitative instrumentale de cas unique a exploré les expériences des participants au programme FrancoDoc, tout en examinant les facteurs qui influencent la prestation de services de santé linguistiquement appropriés aux CLOSM. Nous avons mené des entrevues semi-structurées avec des étudiants en médecine de tout le Canada et nous en avons analysé le contenu thématiquement en utilisant une approche réflexive et inductive.

**Résultats** : Quatre thèmes principaux ont été dégagés des 12 entrevues réalisées : les facteurs facilitant l'apprentissage du français; les obstacles à l'apprentissage du français; les facteurs contextuels influençant la prestation de soins de santé linguistiquement appropriés; et les recommandations visant à améliorer l'enseignement en soins de santé de manière à préparer les apprenants à servir les CLOSM.

**Conclusions**: Bien que très motivés par le programme FrancoDoc, les étudiants participants se heurtent à des obstacles comme les contraintes de temps, la programmation irrégulière des activités, le manque d'occasions d'apprentissage clinique régulier et la réticence des facultés de médecine. Or, pour remplir leurs obligations envers les CLOSM qu'elles servent, il est essentiel que les facultés de médecine reconnaissent la langue comme un déterminant social spécifique de la santé et qu'elles offrent un soutien solide aux initiatives comme le programme FrancoDoc.

# Introduction

Social accountability has become a core institutional value for medical education over the last two decades.<sup>1</sup> Reflecting public expectations, Canadian medical educational policy leaders have explicitly acknowledged the important role that faculties of medicine play in helping to ensure that the "health care system continues to provide the necessary access and quality to meet the needs of the population."<sup>2</sup> The force of these expectations and the gravity of this role take on even greater weight in a country where healthcare access is a social right, one in which it is explicitly and legally acknowledged "that continued access to quality health care without financial or other barriers will be critical to maintaining and improving the health and well-being of Canadians."<sup>3</sup>

Language is among the "other barriers" that may constrict equitable healthcare access.<sup>4</sup> Effective and meaningful access to quality healthcare is contingent upon language concordance between patients and healthcare providers.<sup>5</sup> Indeed, compelling evidence suggests that patientphysician language discordance leads to adverse effects upon patient healthcare access, information comprehension and adherence to advice, guality of care, and both patient and provider satisfaction.<sup>6,7</sup> In the Canadian context, Indigenous communities, refugee and immigrant populations, deaf and deaf-blind persons, and members of official language minority communities (OLMCs) are groups identified as particularly vulnerable to language related healthcare barriers.<sup>8</sup> Here, we consider the healthcare situation for Francophone OLMCs, which exist in every province and territory outside of Québec and have a cumulative population of over one million.9 Francophone OLMCs are markedly heterogeneous, existing on a spectrum from communities whose members principally live and work in their first language (French), as is the case for parts of eastern and north-eastern Ontario, to those in places like British Columbia whose members' everyday lives outside of home and school occur primarily in the majority language (English).<sup>10</sup>

Since the advent of official bilingualism in Canada in 1969, various legislative and policy-based initiatives have been implemented to support OLMC efforts to learn, work, and live in their first language in multiple domains,<sup>11-13</sup> including health.<sup>14</sup> Despite clear desires for service in their first language,<sup>15</sup> however, the struggle to access appropriate French language healthcare services remains an everyday reality for members of Francophone OLMCs.<sup>16,17</sup> Contributing factors include geographical mismatches of

local community needs and linguistically competent physicians,<sup>18</sup> healthcare provider assumptions that Francophone patients are "bilingual enough" for healthcare provision in English,<sup>19,20</sup> lack of active offer<sup>20</sup> (i.e., proactively offering French language healthcare services to the public),<sup>21</sup> and—in the case of officially bilingual New Brunswick—an inability of the healthcare system to consistently offer services commensurate with explicit constitutional rights.<sup>22</sup> These barriers negatively impact the quality of care patients experience in clinical encounters,<sup>23</sup> which may result in worse health

Initiatives that bolster a physician workforce capable of providing linguistically concordant care to populations across Canada may address these inequities. The FrancoDoc program was launched in 2015 as a national collaboration between the Association of the Faculties of Medicine of Canada (AFMC), the Société Santé en français (SSF), the Consortium national de formation en santé (CFNS), and Médecins francophones du Canada (MFC). Its scope includes the 14 Canadian faculties of medicine whose primary language of classroom instruction is English (e.g., the 13 faculties of medicine located outside of Québec, as well as McGill University whose main campus is in Montréal).<sup>27,28</sup> Its key goal is to "identify and mobilize Francophone and Francophile (i.e., non-Francophones with a strong interest in French language and culture) students, prepare and equip them for experiential activities in the community and recruit them for placements in OLMCs...(to) provide safe health services in French."28 Drawing upon the experiences of medical student participants in this initiative, we sought to elucidate FrancoDoc's strengths and challenges in order to identify and target areas for specific programmatic improvement, as well as to more broadly understand how its educational practices shape learners with respect to providing linguistically appropriate healthcare.

# Methodology

We used the constructivist approach of qualitative instrumental single case study<sup>29</sup> to situate our exploration, investigating how medical students described their experiences within FrancoDoc's activities. We drew upon the lead author's perspective as a national FrancoDoc steering committee member for six years to identify the scope of the organization's activities and how they developed over time. These activities have involved both the creation of organizational capacities to bolster French-language learning in a medical context as well as the

provision of direct educational content and leadership development. For the former, FrancoDoc created sustainable links between the 14 faculties of medicine and local SSF-affiliated French language health network organizations, recruited local faculty representatives to help identify and mentor interested learners, and supported extracurricular medical student-run French in Medicine clubs at each faculty. For the latter, it developed a repository of online learning resources<sup>28</sup> and hosted regular national events including the *Ambassadocteurs* symposium, an annual conference held in Ottawa for French in Medicine club medical student leaders.

We interviewed individual medical students who had participated within this collection of activities. While we were interested in medical students' direct experience from a specific programmatic design perspective, we also focused upon how their experiences spoke to the factors shaping the delivery of linguistically appropriate healthcare services to Francophone OLMCs. Further, using the affordances of our methodological framing, we drew upon insights of this example to consider more broadly how language concordance might impact healthcare access for other minority communities in Canada. Ethics approval was received from both the Behavioural Research Ethics Board of the University of British Columbia (#H17-02983) and the Health Sciences Research Ethics Board of the University of Toronto (#39419).

#### Participant recruitment

We invited both past and present medical student French club leaders from each university in the FrancoDoc collaboration to participate, as we felt students in this specific role would be able to speak to both day-to-day learning activities as well as broader contextual factors. A letter of initial contact was sent from the AFMC FrancoDoc project coordinator to these group leaders, including those who attended the final annual Ambassadocteurs symposium held in March 2020. Those who responded were then recruited to participate in the study. Based upon others' work around information power,<sup>30</sup> we estimated that 8-10 interviews would be necessary given the national scope of the study and the relative homogeneity of participants' leadership roles across programs. Participants received a \$25 coffee gift card and a one-page summary of key comments to ensure agreement and accuracy prior to analysis.

#### Research team

The research team consisted of a paediatrician with graduate training in qualitative research who served as a

French in Medicine club mentor, FrancoDoc faculty representative, and national steering committee member for over six years (BS); two residents who, as medical students, developed French language medical student learning resources and had served as French in Medicine club leaders (TY and ME); and a medical education scientist with qualitative research and program evaluation expertise (JNY).

#### Data collection

The lead author (BS) designed the initial interview framework with questions focused upon understanding whether and how interviewees felt that FrancoDoc participation had shifted their sense of self, clinical practice, and social accountability with respect to Francophone populations. Other research team members revised it to incorporate other questions about learners' day-to-day experiences and educational needs. BS then conducted virtual, semi-structured interviews (Zoom), with the first interview held in October 2020 and the final interview completed in August 2021. Interviews were 30 to 60 minutes long, audio-recorded, and transcribed verbatim. The interview framework was adjusted after the first three interviews, allowing for subsequent data collection around novel topics emergent in those initial interviews, such as motivations for-and barriers toparticipation, learner confidence in linguistic abilities, and challenges, even for fluent speakers, of integrating medical French and conversational French.

#### Data analysis

The data set of interview transcripts was analyzed through an approach of reflexive, inductive thematic analysis.<sup>31,32</sup> BS was initially familiarized with the data having conducted the interviews. He established an initial coding framework after the first three interviews; the other team members separately analyzed this initial set of interviews, with subsequent contributions to the coding framework made and differences resolved through iterative discussion. All team members then coded each subsequent interview independently with recursive adjustments made to the overall coding framework. Saturation was reached after the tenth interview. The coding framework was finalized after the twelfth interview, following independent review by all research team members. Initial themes were generated from the groups of codes and then iteratively reanalyzed by all research team members to construct final themes and organize these into a coherent research narrative.

# Results

Twelve medical students from nine Canadian faculties of medicine with representation from all years of undergraduate medical training were interviewed. Five were actively leading their club's activities, while seven had completed their term on their local club's executive. We developed four themes from our data analysis: factors facilitating French language learning; barriers to French language learning; contextual factors shaping linguistically appropriate healthcare provision; and recommendations to improve educational offerings. Exemplar quotations are provided to illustrate these findings.

#### Factors facilitating French language learning

All participants had a level of personal background in French and completed schooling in French immersion or through Francophone primary and secondary education. Of these, six were raised in households in which the majority language was French, four in bilingual households, and two in allophone households (e.g., households whose main language is neither English nor French). Participants emphasized their desire to maintain their French language abilities in a predominantly Anglophone landscape:

Just having had the opportunity to practice medical French...I needed and wanted more French in my life again. (Participant 10)

Others were specifically motivated by difficulties family members experienced accessing linguistically appropriate care:

I've had family members not be able to get proper care because of lack of French communication within the hospitals. (Participant 2)

My grandma [in Northern Ontario] doesn't speak one word of English... So, for her seeking care in her hometown only in English really opened my eyes to the lack of resources we have and the fact that patients like my grandmother should be able to access care in their language of choice. (Participant 5)

Participants described the importance of joining an established local French language learning group, rather than having to build one themselves:

When I got to [medical school] one of the interest groups that caught my eye was a group that got together on a monthly basis and had casual conversations in French, really low stakes opportunities to rehearse. (Participant 9) Further, they spoke highly of FrancoDoc's overall goals, learning resources, and national activities. Social network cohesion—both locally and nationally—provided a sense of solidarity and support that boosted participants' motivation and involvement, despite myriad demands on their time and varying proficiency:

FrancoDoc has provided me with ways to maintain those language skills and has encouraged me to just keep up to date with that...and it showed me that there is a demand for [French] and interest in it in medicine. (Participant 1)

I really want to come out at the other end of medical school and residency being able to fully practice in both languages. That's not something that would happen on my own without French in Medicine or FrancoDoc. (Participant 3)

Interestingly, the effects of the COVID-19 pandemic spearheaded virtual learning sessions that made participation more flexible, connecting learners from an array of locations:

I think COVID-19 has helped in some ways because we've started doing simulated patient history taking and medical French terminology programming. We can do it all virtually and COVID-19 pushed us into doing that more. (Participant 10)

Learning activities also received support from local and provincial groups (the *réseaux*, which translates as networks) devoted to increasing French language healthcare services:

[Our local réseau] has been incredibly helpful. They're always very responsive, and there was a strong desire on their end to have more networking events between Francophone physicians and students, as well as opportunities for people to connect within the Francophone community. (Participant 6)

In certain medical schools, Francophone and Francophile students also benefitted from: (1) proactive efforts by their faculty liaisons; (2) committed local clinical faculty who facilitated learning sessions, served as preceptors, and provided role modelling; and (3) structured programming supporting student efforts to develop linguistic competence:

[Our faculty liaison] was the facilitator in terms of communicating any opportunities for getting involved with FrancoDoc, not just in promoting things but also in following up after national events to see how we could implement things at [our medical school]...she was very adamant about emailing out to the entire class elective opportunities in Québec or even at French clinics in Ontario. (Participant 9)

Learners who perceived French language healthcare provision as key to their eventual careers were committed to staying involved and drew further motivation from envisioning themselves as mentors for future French language learners:

What I gained in terms of participation was the realization that I really do want French to be part of my future career and really seeing the importance of that...and the value of being able to be a bilingual provider. (Participant 9)

#### Barriers to French language learning

Other factors, however, hindered acquisition of French language skills. Different ability levels within clubs made it challenging to organize activities in which all could meaningfully participate:

We have some speakers [who are fully fluent], and they talk very quickly. And we have had [other] students in the past who have a lower level of French who I don't think would be able to understand the speakers. (Participant 4)

In addition, there was a notable decrease in participation and engagement after the first few months of medical school and again at the onset of clerkship. Even for highly engaged students with strong skills, competing academic demands often took priority:

There was a fifty percent drop off in terms of participation from the third years... It's very heavy preclerkship involvement and not so much clerkship. And even for some of the year fours, often we'll only see them after CaRMS [the application for residency] is submitted. (Participant 8)

Unsurprisingly, the COVID-19 pandemic caused cancellation of many groups' plans. Further, while virtual modalities offered the flexibility and possibilities of connecting learners across larger physical distances, "Zoom fatigue" nonetheless had a substantive negative impact upon participants' ongoing involvement:

[Participation] definitely dropped. It's hard because you have classes on Zoom all day...even during the evening, people were not participating that much because they were tired from all day being on the computer. (Participant 11) I was in talks with someone who was going to help us organize mock clinical skill sessions with Frenchspeaking standardized patients...but once [the pandemic] hit everything blew up. (Participant 1)

Dedicated clinical learning opportunities also encountered major roadblocks. Although small-group learning activities and simulations were possible, French language clinical opportunities in majority Anglophone settings were rare:

It's much easier in communities like Montréal and Ottawa where you have all those resources at your disposal. But in somewhere that's isolated and traditionally Anglophone as [here], it's tough. (Participant 1)

Experiences with Francophone patients in majority Anglophone clinics proved challenging and finding Francophone or Francophile preceptors in clinical rotations almost impossible. Even when opportunities became available, formal curricular constraints prevented regular learner involvement:

I had asked [about continuing clinical French language activities], if I would be allowed to go back [in third year] to the Francophone clinic, [which was] my family med rotation [as a second-year medical student]. But unfortunately, it's not one of the core clerkship sites. (Participant 6)

Institutional aims to align clinical training sites with Frenchspeaking populations and preceptors were largely not enacted, and while some programs did enjoy explicit faculty support, others' efforts were impeded by a lack of perceived relevance:

When it came to the final studentship [project], I asked [the faculty] if they wanted someone to help translate more materials for the small group sessions or physicianship sessions, or our physical exam stuff. Those would be great avenues to give people who are better learners in both languages more opportunities to learn in both languages. And they said, 'I don't think we need that. Maybe you could do a project instead in pharmacology'...The extracurricular French group over the past couple years has suffered a bit just because it's been hard to get faculty support behind it. (Participant 12)

Ultimately, medical students struggled with a perceived lack of linguistic confidence, particularly in clinical settings. Some were concerned about taking French electives, as their fluency might impact their performance, and by extension, their competitiveness for the national residency matching service (CaRMS):

[An elective in a majority Francophone context] is something I was thinking of from a post-CaRMS point of view. And the reason for that is just the competitiveness of CaRMS applications makes you want to do your best in every single rotation. And if there's any question of this person's not functioning at the level I would expect them to function, you feel like it's against you. (Participant 3)

Linguistic confidence even impacted self-identified Francophones attending Anglophone institutions; these students highlighted important differences between 'everyday' French and medical French and the difficulty of integrating the latter:

What I realized very quickly is that medical language is a whole different language. It's not English, it's not French...I have now noticed when I speak to my cousins in Montréal who have partners or who are in healthcare, I have a hard time translating that into French...because [medical French is] a whole other language. I've had to work a bit harder when speaking about medical lingo to French physicians. (Participant 2)

Finally, some participants described that peers in their classes saw learning French as a chore lacking long-term utility. They also confronted perceptions that active offer (i.e., proactively offering French language healthcare services) made healthcare encounters more cumbersome:

I think part of the challenge [about retaining participants] is uncertainty around how [learners] are going to use [French-language skills] moving forward and how much they'll benefit from a student point of view or in their future residency. (Participant 3)

# Contextual factors shaping linguistically appropriate healthcare provision

Participants also considered broader factors shaping healthcare provision for Francophone OLMCs. They discussed that these OLMCs were invisible to outsiders; simply recognizing and informing others of their existence was paramount:

Most people just assume there's no French in Saskatchewan and they're always surprised when I'm, like, well, there are entire towns where the first language is French. (Participant 8) People from Québec but also from elsewhere, they think that Québec is French and elsewhere in Canada is all English. But it's not so. I feel like it was very impressive after the [Ambassadocteurs] meeting to see that people were advocating for those Francophone communities that were smaller than Québec...because I think that people from Québec could benefit to understand that people from elsewhere are also advocating for French. (Participant 11)

Respondents highlighted the importance of active offer, which they operationalized through lanyard buttons or signage indicating French language service availability:

One of my colleagues who's now going into third year, she created buttons that say 'je parle français' to add to our lanyards with our nametags. So that it's more apparent that you can speak French with me. (Participant 10)

Beyond providing visible symbols, participants understood active offer as an ethos and broad duty of patient care to advocate for patient rights to receive French language services. Medical students also recognized the positive influence of language-concordant care on shaping information gathering and delivery in clinical interactions, and its powerful impact on health outcomes in OLMCs:

There's someone who came from [an OLMC town], and they were mentioning that some of the patients that have come back after surgery [in an Anglophone centre] with no idea what the post-op care was like. Sometimes they didn't even know what the diagnosis was because they couldn't understand what the physician was saying. (Participant 2)

There was a story of a gentleman who essentially they did a cognitive screening on. His first language was French, and they did it in English. And his score was...so low to the extent that the clinical team was concerned about this person's ability to care for himself and to cope at home. When really, it wasn't at all reflective of—he did have some level of cognitive impairment, but it was definitely not to the level that was reflected on that exam. And when they actually re-did it in French, he scored much higher and that saved him from being institutionalized. Which I can't even imagine, you know, seeing what that means to someone to be put in long-term care. It's not anything to take lightly. And so that really hit home. (Participant 9)

#### Recommendations to improve educational offerings

We created five key recommendations to improve educational practices from our analysis (Table 1). Participants sought improved national availability and regularity of FrancoDoc learning resources and events:

I would have benefited from making things more regular. So, having weekly FrancoDoc based events...something like that I could have regularly in my schedule and other colleagues of mine could also see okay, this is regular. This is the timeslot. (Participant 10)

I would have liked to see more collaboration and integration for students in Anglophone medical faculties with the larger Francophone and Francophile medical community. (Participant 12)

In addition, they recommended more robust local French in Medicine clubs with improved scope, organization, sustainability, and inclusiveness:

Finding ways to encourage individuals who aren't native French speakers... to be more active and involved and helping them recognize that opportunities for French speaking are open to them as well. (Participant 1)

They desired improved alignment between French in Medicine clubs, FrancoDoc, and local/provincial réseaux:

I haven't been able to chat with [the local réseau]. We have a good relationship, but we haven't had a formal meeting where we could sit down and discuss things. I wasn't aware of their role until I attended the weekend Ambassadocteurs workshop...because when I joined I was very confused, like, who is this [réseau] person, why are they attending all of our meetings? (Participant 4)

Participants' final two recommendations targeted their own faculties of medicine. They suggested incorporating French language learning into undergraduate medical education as a core skill and competency and the provision of certificates attesting to linguistic competence suitable for inclusion in CaRMS applications:

In medicine you emphasize professional development so much and lifelong learning. Yet I think there's a disconnect with language compared to clinical skills. [The faculty is like] 'clinical skills go ahead, develop yourself'. But what kind of supports are we being given to develop French or any other language so that we can still better service patients? (Participant 4) I think [a certificate of achievement] would be interesting...it would be really powerful to be able to have students with the proof [to say this] is what I can do. (Participant 6)

They also discussed the need for robust and sustained institutional support that incentivizes elective experiences in Francophone contexts and recognizes that learners with healthcare competence in both official languages are vital assets for achieving social accountability mandates that inform the strategic plans of faculties of medicine:

I would incentivize French medicine more in terms of offering help, [such as] the English institutions' students doing placements in Québec or in French communities and being able to get more funding to be able to travel there. (Participant 2)

I feel that some people when we are, like, advocating for French, like, being for something is not being against another thing. And people don't really see the difference in that. And I came to [this medical school] to learn English but still wanting to keep my French. But I feel like both are important. (Participant 11)

Table 1. Recommendations to support French language learningand bolster French language competence

Increase availability and regularity of FrancoDoc offerings

Enhance French in Medicine Club content, sustainability, and inclusivity

Develop greater alignment between French in Medicine Clubs, FrancoDoc, and local/provincial réseaux

Incorporate French language learning into undergraduate medical education as a core skill and competency

Encourage faculties of medicine to provide more robust institutional structured support for French language learning

### Discussion

Improving healthcare delivery to Francophone OLMCs through French language educational offerings to medical learners—even through programs like FrancoDoc that have a specific mandate—is a complex endeavour. Certain factors identified through our analysis facilitate the acquisition of linguistic competence, including: individual trainee motivation; their ultimate career goals; strong social networks; engagement with national-level FrancoDoc activities; support from *provincial réseaux*; and local faculty of medicine involvement. Regular participation in activities is high at the outset of medical school, indicating both enthusiasm and learner acknowledgement of the issue's importance. Our results suggest that in addition to gaining language skills, participation in FrancoDoc activities significantly shapes who these learners become as professionals. In addition to promoting recognition of Francophone OLMCs, learners attune themselves to patient illness experience in minority contexts. This possibly obviates the realityrecognized by others<sup>33</sup>—of patients having to rely upon their second or third language to navigate urgently required healthcare in a country where their first language officially recognized and protected. Learners' is commitment to active offer, or proactively offering French language healthcare services, is an act of hospitality, a small but pivotal way to make acute care spaces-places where arguably no patient wishes to be-less unwelcoming during times laden with vulnerability and stress.<sup>34</sup>

Furthermore, participants recognized that routinely burdening patients who speak an official language with accommodating their providers' lack of linguistic ability is unjust and risks suboptimal care, worse outcomes, and unanticipated harm. They were keenly aware of patientphysician language discordance as an overlooked force in healthcare interaction.<sup>35</sup> Social exclusion, which speaks broadly to the deleterious effects that denial of social goods such as healthcare and language services can have on health, is among the 14 social determinants of health operant in the Canadian context.<sup>36</sup> While we have focused on the particular example of an official language in Canada, we believe that our analysis more broadly implies that it is time to consider language-the medium through which healthcare encounters flow—as a social determinant of health in and of itself.

Our results also illustrate the positive force for change that medical students can be for healthcare and its educational practices, as evidenced by the energy and motivation they demonstrate towards developing abilities to deliver highquality healthcare to Francophone OLMCs. Unfortunately, their impressive efforts are jeopardized by a myriad of systemic forces, including: competing time demandsparticularly during clinical years; a paucity of structured and regular clinical workplace-based training opportunities in French at Anglophone faculties of medicine; a lack of faculty support; a lack of confidence in their own abilities; and a lack of training to integrate conversational French fluency with technical proficiency in medical French. A concrete summary of our recommendations (Table 1) provides useful directions for faculties aiming to better support them. Although there are notable exceptions apparent upon review,<sup>37-40</sup> the majority of faculties in the FrancoDoc initiative lack strategic plans, admissions processes, or formal programming to address the specific needs of Francophone OLMCs.

However, what all these faculties do incorporate to some degree in their institutional vision, mission, and/or values is social accountability, "the obligation to direct their education, research and service activities towards addressing the priority health concerns of the community, region, and/or nation they have a mandate to serve."41 As the fabric that binds medical schools and their communities and regions together,"42 social accountability compels faculties to take into account the patients, communities, and populations that they serve, and the realization of whose health care needs their existence is contingent. On the one hand, many OLMCs are small, and one might ask whether their healthcare needs should indeed be prioritized. Yet OLMCs have specific constitutional protections,<sup>11</sup> and federal government policy recognizes the need to both ensure their survival and to support "the vitality of [their] institutions in key sectors, [such as] education, health, immigration, culture, and justice."43 In addition, the Canada Health Act is clear "that continued access to quality healthcare without financial or other barriers will be critical to maintaining and improving the health and well-being of Canadians."<sup>3</sup> How its accessibility pillar is interpreted may benefit from reexamination through the lens of linguistic discordance, one specific Romanow that builds upon Report recommendations with respect to OLMCs.<sup>4</sup>

Further, social accountability compels public consultation.<sup>2</sup> Whether and to what degree provincial réseaux have been incorporated into the strategic planning of these 14 faculties of medicine's activities is beyond the scope of this paper. However, regular consultation with the réseaux could better support a committed cohort of medical students already motivated to align their learning, identities, and career trajectories with the realization of equitable care delivery to OLMCs. Such dedicated 'pipeline' training approaches have been used effectively in other areas such as distributed medical education to improve rural and remote physician workforce numbers.44-47 This kind of approach may provide a template from which faculties of medicine could develop a more supportive national structure of physician training, one that meets the legal and ethical obligations to all Francophone OLMCs, and one that could also be flexibly tuned to the unique health care needs of each of these communities within the specific geographical regions that faculties serve.

Finally, instrumental case studies such as this one explore a particular phenomenon in-depth, yet their insights open up questions beyond the specific context under examination. The political and legal commitments to official bilingualism on the federal level—itself informed by a legacy of French as one of Canada's two founding colonial languages—provide institutional supports to Francophone OLMCs in ways that other minority linguistic communities within the country's borders do not enjoy, including both Indigenous and immigrant populations.<sup>48</sup> Admittedly, some Indigenous languages do enjoy official status on a territorial level, including nine in the Northwest Territories<sup>49</sup> and two in Nunavut.<sup>50</sup> However, as recent reports make disturbingly clear, official status alone does not seamlessly translate to linguistically and culturally appropriate healthcare, even in contexts where Indigenous languages comprise the majority of the population served.<sup>51</sup>

In addition, driven by immigration patterns, the number of Canadians who speak a non-official language at home as of 2021 stands at 4.6 million, an increase of 16% since 2016.<sup>52</sup> Over a half of a million Canadians speak Mandarin (531,000) or Punjabi (520,000) at home, with also sizeable populations speaking Cantonese (394,000), Spanish (317,000), Arabic (286,000), Tagalog (275,000), and Persian languages (186,000).<sup>49</sup> This list is far from exhaustive, and double-digit percentage increases in speakers over this five-year period is the norm. While an in-depth exploration of the health care experiences of speakers of each of these linguistic groups is beyond the scope of this study, population trends such as these are indicative that the linguistic mosaic of Canada is changing. As a consequence, educating learners to meet the health care needs of these communities in linguistically and culturally appropriate ways is a key task for medical education going forward.<sup>53</sup> Programs similar in design and scope to FrancoDoc may be one vehicle by which these aspirations can be materially realized.

#### Limitations

This study is one snapshot in time, and despite repeated efforts, does not include participants from every medical school in the FrancoDoc initiative. Analyzing substantial differences between all provinces, medical schools, French in Medicine clubs, and réseaux is thus limited, yet our results illustrate concerns transcending contextual variability, especially regarding individual and institutional healthcare delivery. These concerns intersect with broader considerations of social organization, culture, economics, politics, and power relations. While in-depth explorations of these concerns are beyond this study's scope, further such empirical research is needed to align medical educational practices with equitable health delivery for all Canadians, including those who belong to other linguistic minority groups.

### Conclusions

It is troubling that despite official legal protections, Francophone OLMCs in Canada continue to experience gaps in healthcare access and ensuing potential negative effects on the health of their individual members. Strategic initiatives such as FrancoDoc that aim to educate medical students to provide linguistically appropriate care to OLMCs are possible ways to close this gap; the results of this work suggest clear potential to produce physicians attuned to these specific healthcare needs and remind us of the powerful force for positive change that medical students offer to the design and delivery of the healthcare system. Fully realizing this potential and harnessing this force for change, however, is contingent upon faculties of medicine enacting what their social accountability mandates espouse in partnership with these communities, the réseaux, and federal, provincial, and territorial governments.

**Conflicts of Interest:** Dr Schrewe has been an unpaid member of the board of directors of RésoSanté Colombie-Britannique since May 2016. In addition, he served in an unpaid role as the UBC faculty representative for the AFMC's FrancoDoc Collaboration from 2015-2021. Dr Yeuchyk and Dr Elhafid spearheaded the creation of FrancoMed, a centralized online program for learning medical French that received partial funding from the AFMC.

**Funding:** This study received partial funding from the Association of Faculties of Medicine of Canada (AFMC) to support transcription costs.

### References

- The Association of Faculties of Medicine of Canada. Social accountability. Ottawa: AFMC; 2021 Available from: <u>https://www.afmc.ca/resources-data/social-accountability/</u> [Accessed on Mar 22, 2023].
- Health Canada. Social accountability—A vision for Canadian medical schools. Ottawa: Minister of Public Works and Government Services Canada: Ottawa; 2001.
- Government of Canada. Canada Health Act (R.S.C., 1985, c. C-6). Ottawa: Government of Canada.
- Romanow RJ. Building on values: the future of health care in Canada—final report. Commission on the future of health care in Canada. Ottawa: Government of Canada; 2002.
- Molina RL, Kasper, J. The power of language-concordant care: a call to action for medical schools. *BMC Med Educ* 2019; 19:378. <u>https://doi.org/10.1186/s12909-019-1807-4</u>
- Jacobs E, Chen AHM, Karliner LS, Agger-Gupta N, Mutha S. The need for more research on language barriers in healthcare: a

proposed agenda. *Milbank Quarterly* 2006; 84(1):111-133. https://doi.org/10.1111/j.1468-0009.2006.00440.x

- Health Canada. Language barriers in access to healthcare Ottawa: Minister of Public Works and Government Services Canada; 2001 Available from: <u>https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/hcs-sss/alt\_formats/hpb-dgps/pdf/pubs/2001-lang-acces/2001-lang-acces-eng.pdf</u> [Accessed on Mar 22, 2023].
- Bowen S. The impact of language barriers on patient safety and quality of care. Prepared for la Société Santé en français. 2015 Available from: <u>https://www.santefrancais.ca/wpcontent/uploads/2018/11/SSF-Bowen-S.-Language-Barriers-Study-1.pdf</u> [Accessed on Mar 22, 2023].
- Statistics Canada. English, French and official language minorities in Canada. Ottawa: Government of Canada; 2017 Available from: <u>https://www12.statcan.gc.ca/censusrecensement/2016/as-sa/98-200-x/2016011/98-200x2016011-eng.cfm</u>. [Accessed on Mar 22, 2023].
- Government of Canada. Innovation, Science and Economic Development Canada—CommunAction. What is an official language minority community? Ottawa: Government of Canada; 2013, Available from: <u>https://www.ic.gc.ca/eic/site/com-com.nsf/eng/h\_01223.html</u> [Accessed on Mar 22, 2023].
- Government of Canada, Justice Laws Website. Constitution Act, 1982: Part I—Canadian Charter of Rights and Freedoms.
  Ottawa: Government of Canada; 1982 Available from: <u>https://laws-lois.justice.gc.ca/eng/Const/page-12.html</u>. [Accessed on Mar 22, 2023].
- Government of Canada, Justice Laws Website. Official Languages Act. Ottawa: Government of Canada; 1988. Available from: <u>https://laws-lois.justice.gc.ca/eng/acts/o-3.01/page-1.html</u>. [Accessed on Mar 22, 2023].
- Government of Canada, Office of the Commissioner of Official Languages. Official languages in the provinces and territories. Ottawa: Government of Canada; 2020. Available from: <u>https://www.clo-</u> <u>ocol.gc.ca/en/language\_rights/provinces\_territories?wbdisable</u>

<u>=true</u>. [Accessed on Mar 22, 2023].

- Alimezelli HT, Leis A, Denis W, Karunanayake C. Lost in policy translation: Canadian minority Francophones and health disparities. *Can Public Policy*. 2015; 41(Suppl 2):S44-S52. <u>https://doi.org/10.3138/cpp.2014-073</u>
- Gagnon-Arpin I, Bouchard L, Leis A, Bélanger M. Accès et utilisation des services de santé en langue minoritaire. In : Landry R, editor. La vie dans une langue officielle minoritaire au Canada. Sainte-Foy: Presses de l'Université Laval; 2014. p. 195-222.
- Warnke J, Bouchard L. Validation de l'équité d'accès des CLOSM aux professionnels de la santé dans les régions sociosanitaires du Canada. *Rev Can Sant Pub* 2013; 104(6)(Suppl. 1):S49-S54. <u>https://doi.org/10.17269/cjph.104.3490</u>
- 17. Consultative Committee for French-Speaking Minority Communities. *Towards a new leadership for the improvement of health services in French—report to the federal Minister of Health*. Ottawa: Government of Canada; 2007. Available from: <u>https://www.canada.ca/content/dam/hc-sc/migration/hc-</u>

<u>sc/ahc-asc/alt\_formats/hpb-dgps/pdf/olcdb-</u> <u>baclo/cccfsm/2007-cccfsm/2007-cccfsm-eng.pdf</u>. [Accessed on Mar 22, 2023].

- Gauthier AP, Timony PE, Wenghofer EF. Examining the geographic distribution of French-speaking physicians in Ontario. Can Fam Phys 2012; 58:e717-24. <u>https://www.cfp.ca/content/cfp/58/12/e717.full.pdf</u>
- Timony PE, Gauthier AP, Serresse S, Goodale N, Prpic J. Barriers to offering French language physician services in rural and northern Ontario. *Rural Remote Health* 2016; 16(3805):1-13. <u>https://doi.org/10.22605/RRH3805</u>
- 20. De Moissac D, Bowen S. Impact of language barriers on access to healthcare for official language minority Francophones in Canada. *Healthcare Management Forum* 2017; 30(4):207-212. https://doi.org/10.1177/0840470417706378
- Government of Canada, Office of the Commissioner of Official Languages. Active offer—a culture of respect, a culture of excellence. Ottawa: Government of Canada; 2013 Available from: <u>https://www.clo-ocol.gc.ca/sites/default/files/activeoffer-tool.pdf</u>. [Accessed on Mar 22, 2023].
- Office of the Commissioner of Official Languages. 2020-2021 annual report. Fredericton: Office of the Commissioner of Official Languages for New Brunswick; 2021. Available from: <u>https://officiallanguages.nb.ca/wp-</u> <u>content/uploads/2021/10/ANNUAL-REPORT-2020-2021.pdf</u>. [Accessed on Mar 22, 2023].
- 23. De Moissac D, Bowen S. Impact of language barriers on quality of care and patient safety for official language minority Francophones in Canada. *J Patient Experience* 2019; 6(1):24-32. https://doi.org/10.1177/2374373518769008
- Pédération des communautés francophones et acadienne du Canada. French-language healthcare: improving access to French-language health services. Ottawa: Fédération des communautés francophones et acadienne du Canada; 2001. Available from:

https://web.archive.org/web/20220627152213/https://fcfa.ca /wp-content/uploads/2018/03/Pour-un-meilleur-acces-a-desservices-de-sante-en-francais-EN.pdf [Accessed on Mar 22, 2023].

- Alimezelli HT, Leis A, Karunanayake, C, Denis W. Determinants of self-rated health of Francophone seniors in a minority situation in Canada. *Minorités linguistiques et société/Linguistic Minorities and Society* 2013; 3(3):144–70. <u>https://doi.org/10.7202/1023804ar</u>
- 26. Bouchard L, Desmeules, M. (2013). Les minorités linguistiques du Canada et la santé. Healthcare Policy 2013; 9:38-47.
- Société Santé en Français. Les réseaux de santé en français du Canada. Ottawa: SSF; 2021. Available from: <u>https://www.santefrancais.ca/reseaux/</u>. [Accessed on Mar 22, 2023].
- The Association of Faculties of Medicine of Canada. FrancoDoc. Ottawa: AFMC; 2021. Available from: <u>https://www.afmc.ca/resources-data/education/franco-doc/</u>. [Accessed on Mar 22, 2023].
- Baxter P, Jack S. Qualitative case study methodology: study design and implementation for novice researchers. *Qualitative Report* 2008; 13(4):544–59. <u>https://doi.org/10.46743/2160-3715/2008.1573</u>

- Malterud K, Siersma VD, Dorrit Guassora A. Sample size in qualitative interview studies: guided by information power. *Qual Health Res* 2016; 26(13): 1753-1760. <u>https://doi.org/10.1177/1049732315617444</u>
- 31. Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology* 2006; 3(2):77-101. <u>https://doi.org/10.1191/1478088706qp0630a</u>
- Braun V, Clarke V. Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health* 2019; 11(4):589-597. https://doi.org/10.1080/2159676X.2019.1628806
- Lacaze-Masmonteil T, Leis A, Lauriol E, Normandeau J, Moreau D, Bouchard L, Vaillancourt C. Perception du contexte linguistique et culturel minoritaire sur le vécu de la grossesse. *Revue Canadienne de Santé Publique* 2013; 104(6)(Suppl.1):S65-S70. https://doi.org/10.17269/cjph.104.3515
- 34. Schrewe B, Ruitenberg CW. Offering welcome in the kingdom of the sick: a physician guide to hospitality. J Eval Clinical Practice 2021; 27(3):571-577. <u>https://doi.org/10.1111/jep.13410</u>
- Espinoza J, Derrington S. How should clinicians respond to language barriers that exacerbate health inequity? AMA J Ethics 2021; 23(2):E109-116. <u>https://doi.org/10.1001/amajethics.2021.109</u>
- Mikkonen J, Raphael D. Social determinants of health: the Canadian facts. Toronto: York University School of Health Policy and Management; 2010.
- Northern Ontario School of Medicine. *The NOSM challenge:* strategic plan 2021-2025. Sudbury/Thunder Bay: NOSM; 2021 Available from: <u>https://strategicplan.nosm.ca</u> [Accessed on Jan 20, 2023].
- University of Ottawa. Leading innovation for a healthier world—2020-2025 strategic plan. Ottawa: University of Ottawa; 2020. Available from: <u>https://med.uottawa.ca/sites/med.uottawa.ca/files/fm\_2020-</u> 2025 strategic plan en web.pdf. [Accessed on Mar 22, 2023].
- University of Manitoba. Rady Faculty of Health Sciences—Max Rady College of Medicine: applicant information bulletin 2022-2023. Winnipeg: University of Manitoba; 2021 Available from: <u>https://umanitoba.ca/explore/sites/explore/files/2021-</u>03/medicine-bulletin.pdf. [Accessed on Mar 22, 2023].
- University of Saskatchewan College of Medicine. *Health* training in French. Saskatoon: University of Saskatchewan; 2022. Available from: <u>https://medicine.usask.ca/socialaccountability/training/health-training-in-french.php</u>. [Accessed on Mar 22, 2023].
- Boelen C, Heck JE. Defining and measuring the social accountability of medical schools. Genève: World Health Organization; 1995. Genève.
- Rourke J. Social accountability in theory and practice. Annals Fam Med 2006; 4(S1):S45-S48. https://doi.org/10.1370/afm.559

- Government of Canada, Canadian Heritage. English and French: towards a substantive equality of official languages in Canada. Ottawa: Government of Canada; 2021. Available from: <u>https://www.canada.ca/en/canadian-</u> <u>heritage/corporate/publications/general-publications/equality-official-languages.html</u>. [Accessed on Mar 22, 2023].
- Tesson G, Curran V, Pong R, Strasser R. Advances in rural medical education in three countries: Canada, the United States and Australia. *Educ Health (Abingdon)* 2005;**18(3)**:405-15. <u>https://doi.org/10.1080/13576280500289728</u>
- Bates J, Frost H, Schrewe B, Jamieson J, Ellaway R. Distributed education and distance learning in postgraduate medical education. Ottawa: Members of the Future of Medical Education in Canada Postgraduate Consortium; 2011.
- Wenghofer EF, Hogenbirk JC, Timony PE. Impact of the rural pipeline in medical education: practice locations of recently graduated family physicians in Ontario. *Hum Resour Health* 2017; 15(1):16. <u>https://doi.org/10.1186/s12960-017-0191-6</u>
- Rourke J, Asghari S, Hurley O, Ravalia M, Jong M, Parsons W, et al. From pipelines to pathways: the Memorial experience in educating doctors for rural generalist practice. *Rural Remote Health* 2018; 18(1):4427. <u>https://doi.org/10.22605/RRH4427</u>
- Battarbee K. Languages Canada: the paradoxes of linguistic inclusivity—colonial/founding, Aboriginal, and immigrant language rights. London J Can Studies 2019; 34(1):79-102. <u>https://doi.org/10.14324/111.444.ljcs.2019v34.005</u>
- Government of the Northwest Territories. Official Languages Act (RSNWT 1988, c.O-1). Yellowknife: Government of the Northwest Territories; 1988. Available from: <u>https://www.justice.gov.nt.ca/en/files/legislation/officiallanguages/official-languages.a.pdf</u>. [Accessed on Mar 22, 2023].
- Government of Nunavut. Official Consolidation of Official Languages Act (C.S.Nu.,c.O-20). Iqaluit: Government of Nunavut; 2021. Available from: <u>https://www.nunavutlegislation.ca/en/consolidated-</u> <u>law/official-languages-act-official-consolidation</u>. [Accessed on Mar 22, 2023].
- Office of the Languages Commissioner of Nunavut. If you cannot communicate with your patient, your patient is not safe. Iqaluit: Government of Nunavut; 2015. Available from: <u>https://langcom.nu.ca/sites/langcom.nu.ca/files/QGH%20-</u> <u>%20Final%20Report%20EN.pdf</u>. [Accessed on Mar 22, 2023].
- Statistics Canada. While English and French are still the main languages spoken in Canada, the country's linguistic diversity continues to grow. Ottawa: Government of Canada; 2022 Available from: <u>https://www150.statcan.gc.ca/n1/dailyquotidien/220817/dq220817a-eng.htm?indid=32989-1&indgeo=0</u>. [Accessed on Mar 22, 2023].
- Zhou JS, Chen R, Feng YY, Lu Y, Nyhof-Young J. Who wants to translate? Evaluation of a novel medical Mandarin education program for and by pre-clerkship medical students [version 1]. *MedEdPublish* 2020; 9:262.

https://doi.org/10.15694/mep.2020.000262.1