Foot Health During The COVID-19 Crisis: An Audit Of A Partnership Between Primary Care Physicians And A University Podiatric Medicine Clinic In Canada

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Abstract: This is an audit of a partnership formed between the university podiatry clinic located in Trois-Rivières, Québec, Canada and regional primary care physicians' groups affiliated with the Centre de santé et de services sociaux de la Mauricie-et-Centre-du-Québec (Québec, Canada), in the months following the beginning of the COVID-19 crisis. Podiatric medicine is not generally part of the public health system in Québec. However, the data from this audit enabled the creation of an initial overview of this partnership, including a referral form and the approach used to reach specific indicators.This provided insight into foot health needs in primary care to maximize students' training, foot health and limb preservation. Indeed, our data shows that we have partially achieved our objectives and that we need to improve our audit practices and data while charting a better course for the future.

Key words: *foot health, COVID-19, podiatric medicine, primary care, foot health, limb preservation, education*

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Podiatrist's field of practice in Canada consists of the evaluation of local conditions of the foot (from the malleoli to the toes) and their treatment by various means, including pharmacological, medical imaging and surgical treatments.[1] They are, therefore, well placed to manage foot health and preserve the lower limbs. However, within Canada with its various jurisdictions, podiatrists are exclusively in the private sector in the province of Québec. In Canada, a four-year program leading to a doctorate in podiatric medicine (DPM) has been offered at the University of Québec in Trois-Rivières (UQTR) since 2004.[2] This undergraduate DPM is the only one in Canada and in French-speaking countries. The final two years include rigorous clinical training through internships and externships in various clinical settings, mainly at the university teaching clinic, the University Podiatric Medicine Clinic (UPMC).[2]

Due to the COVID-19 pandemic and the total lockdown decreed by the Québec government from the end of March to June 2020, some internships and externships were cancelled in the academic year 2020-2021. It took more than two years for the students in our program to resume their normal activities. For example, it was necessary to reduce the number of patients present at the UPMC and increase the time between appointments. This lockdown limited public access to many health resources as well. More generally, all health-care professionals working in outpatient clinics, such

as those treating musculoskeletal conditions, for example podiatrists, physiotherapists, sports therapists and chiropractors, were also instructed to limit in person consultations to emergencies only.[3] This has compelled many stakeholders in the health sector to innovate, particularly by developing telemedicine services and revising priorities in primary care.[4,5] Therefore, the UPMC has also innovated by developing a new partnership, residing in a referencing trajectory with regional primary care services, to support foot health and limb preservation. It should be noted that podiatry is not a health profession included in the publicly funded health services basket anywhere in the province of Québec and that there is no formalized referral mechanism from primary care to podiatrists or vice versa. This therefore limits the referral of primary care physicians or nurse practitioners (Infirmière praticienne spécialisée de première ligne [IPS-PL]) to community podiatrists, including those at the UPMC, and to the very few practising in hospitals through partnerships with the UQTR training program.[6]

Foot Conditions As Primary Care Emergencies

Several foot conditions can be primary care emergencies, including acute musculoskeletal pain, diabetic foot disease, such as Charcot foot and foot ulcers, trauma, such as fractures, and local infections.[7,8]

The podiatry profession has proven its flexibility and adaptability during the COVID-19 pandemic, adjusting quickly to ensure patients had access to treatments to reduce the risk of infection, ulceration and amputation in the United Kingdom.[8] It has demonstrated the same capacity for musculoskeletal problems and supporting the public health-care system in the province of Québec.[3] Thus, in order to enable students studying podiatry at UQTR to achieve their training objectives in compliance with the program requirements,[2] for the duration of one semester (January to May 2021), patients referred by primary care physicians from the Centre de santé et de services sociaux de la Mauricie-et-Centre-du-Québec (CIUSSS-MCQ) territory were able to benefit from free consultations at the UPMC for certain targeted health conditions that may need minor surgery, wound care and imaging, such as ultrasound-guided injection.

Aim, Objective And Indicators

We aimed to evaluate the effects of this partnership with this clinical audit. The main objective was to determine whether the cases referred to the UPMC met the students' training needs (i.e., the main reasons for consultation that had been identified by the program at the outset).

The second objective was to describe the referred cases, which reveal the urgent foot conditions identified by primary care physicians in the region covered by the UPMC, and for which podiatrists can support primary care services.

The third objective was to conduct an initial audit of care at the UPMC to assess the future possibilities of introducing audits on the quality of care to support best practice recommendations and research.

Overall, this allowed us to assess how the allocated budget has been used to support training of future podiatrists.

The proposed indicators are based on arbitrary thresholds, public health data and exemplary recommendations, considering that we had no comparative internal data, accreditation or guidelines to follow. Indicators were measured after the four-month period. (See Table 1.)

Table 1: Indicators

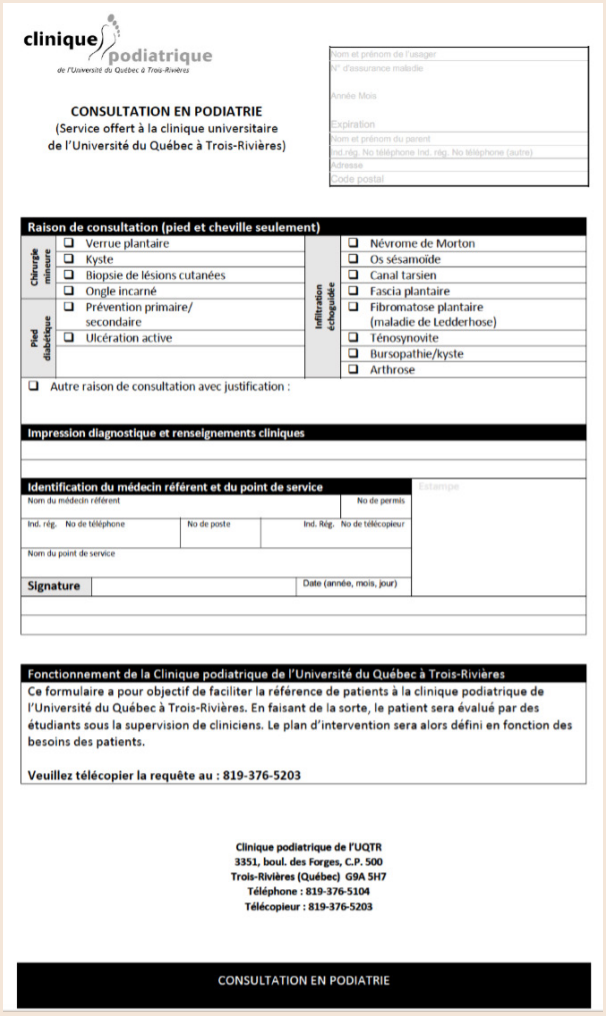
Indicator	Descriptive	Descriptive
Indicator 1	The project allows supporting a pre-COVID-19 level for new consultations so that students can be trained at initial history taking (past and current medical history).	Pre-COVID-19: This represented 154 new consultations per month for the UPMC. Thus, the trajectory makes it possible to reach 20% of new consultations, or about 31 consultations per month.
Indicator 2	The consultation profile fits the regional characteristics in terms of sex, age, and rurality to respect a certain equity of access.	The profile of the people who consulted is comparable to the regional averages.
Indicator 3	The consultations resulting from the trajectory are in accordance with the pre-established sheet for the UPMC management targeted needs, i.e., minor surgery (warts, cysts, biopsy of skin lesions, ingrown toenails), diabetic foot care (primary/secondary prevention and wound care) and ultrasound-guided infiltrations for neuromusculoskeletal problems (neuroma, sesamoid, tarsal tunnel, plantar fascia, fibromatosis, tenosynovitis, bursitis, osteoarthritis).	Consultation requests correspond to at least 80% of the UPMC management's targeted needs.
Indicator 4	The partnership stimulates and establishes good practices for the coordination and follow-up of care.	Arrange at least one follow-up with the patient after the initial consultation, for an average of two consultations per case. Follow up to the referring primary care physician.
Indicator 5	It respects the allocated budget ($10,000 CAD) with no consultation fee, but charges may apply to patients for specific treatments, which are generally not covered.	The distribution of costs between the UPMC and the patient is higher for the UPMC considering the coverage of consultations in this partnership.
Additional Subjective Indicator	The process of conducting an audit within the UPMC and collecting data for future research projects and audits.	Share the general experience, make comments and suggest a plan of action.

Methodology

We conducted a retrospective audit of all successive cases that were referred to the UPMC between January and May 2021 using a specific reference form developed by MPM and MBF (Figure 1). After securing the $10,000 CAD budget allocated by the university and determining how it would be used, the proposed referral mechanism was validated by the clinical leadership and stakeholders of the UPMC. Thereafter, an internal press release was sent to the staff, including lecturers and professors at the UPMC, and to the publicly-funded primary care clinics in the CIUSSS-MCQ territory. A reminder was sent approximately four months after the initial release. To avoid confusion regarding the service coverage through this partnership, the consultation request form had to be sent by fax to the UPMC.

The institutional ethics committee confirmed that this audit did not require ethical approval in accordance with the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans (TCPS2, art. 2.1).[9] Our audit aimed to draw up a portrait of this partnership for educational and quality improvement purposes and, therefore, does not fall within the competence of research (EPTC2, art. 2.5).[9] In addition, all patients treated at the UPMC signed a consent form allowing the use of data for research and audit purposes during their first consultation. We used the adapted method in 14 steps to conduct a clinical practice audit suggested by Godwin in *Canadian Family Physician* to report our project.[10]

The audited cases were identified from the billing list by the clinic coordinator, considering that the costs of the initial and follow up consultation were covered. The list of potential cases was then validated in the clinic's appointment system CTRL (CTRL Informatique ltée, Québec, Canada) by the principal data reviewer (YA), as the consultation requests had been digitized and placed in the patient's medical file. A database was created from an extraction file validated by VB, YA, MBF. The extracted data concerned the case profile (e.g., sex, age, place of residence), reason for the first consultation, follow-up (e.g., total number of consultations at the UPMC and follow-up visits, feedback to the referring physician) and the costs incurred by the patient and by the university. The data were extracted (YA) anonymously and no patient identification data was recorded. We considered cases over a period of four months. The data was analyzed by YA and VB using simple descriptive statistics in Microsoft Excel.



clinique podiatrique
de l'Université du Québec à Trois-Rivières

CONSULTATION EN PODIATRIE
(Service offert à la clinique universitaire
de l'Université du Québec à Trois-Rivières)

Nom et prénom de l'usager
N° d'assurance maladie
Année Mois
Expiration
Nom et prénom du parent
Ind. rég. No téléphone Ind. rég. No téléphone (autre)
Adresse
Code postal

Raison de consultation (pied et cheville seulement)

Chirurgie mineure
- ❑ Verrue plantaire
- ❑ Kyste
- ❑ Biopsie de lésions cutanées
- ❑ Ongle incarné
- ❑ Prévention primaire/ secondaire
- ❑ Ulcération active

Pied diabétique

Infiltration échoguidée
- ❑ Névrome de Morton
- ❑ Os sésamoïde
- ❑ Canal tarsien
- ❑ Fascia plantaire
- ❑ Fibromatose plantaire (maladie de Ledderhose)
- ❑ Ténosynovite
- ❑ Bursopathie/kyste
- ❑ Arthrose

❑ Autre raison de consultation avec justification :

Impression diagnostique et renseignements cliniques

Identification du médecin référent et du point de service

Nom du médecin référent | No de permis | Estampe
Ind. rég. No de téléphone | No de poste | Ind. Rég. No de télécopieur
Nom du point de service
Signature | Date (année, mois, jour)

Fonctionnement de la Clinique podiatrique de l'Université du Québec à Trois-Rivières

Ce formulaire a pour objectif de faciliter la référence de patients à la clinique podiatrique de l'Université du Québec à Trois-Rivières. En faisant de la sorte, le patient sera évalué par des étudiants sous la supervision de cliniciens. Le plan d'intervention sera alors défini en fonction des besoins des patients.

Veuillez télécopier la requête au : 819-376-5203

Clinique podiatrique de l'UQTR
3351, boul. des Forges, C.P. 500
Trois-Rivières (Québec) G9A 5H7
Téléphone : 819-376-5104
Télécopieur : 819-376-5203

CONSULTATION EN PODIATRIE

Figure 1: Reference form developed by the UPMC

Results

Indicator 1: Number of new consultations with this partnership

The total number of cases audited during the studied period is 65. This represents approximately 16 new cases per month. We do not have comparable data for a similar period before COVID-19. However, this has contributed to an increase in the number of consultations at the clinic in 2021, when it was difficult to recruit new patients. Considering that the UPMC usually aims for around 154 new patients per month for training, the partnership has had a modest expected effect

Indicator 2: Profile of the cases

Figure 2 reports the distribution of the sex, age and place of residence of the cases, respectively.

Thus, the sex breakdown is fairly even and in line with regional data, as is the age distribution.[11] The age range of the cases was from five to 91 years-old, with an average age of 55. This is more than the average age of the population, which is 44 (not adjusted for sex) compared to the latest data available from the 2017 census profile of Statistic Canada.[12] This is consistent with the fact that foot problems preferentially affect adults and elderly people, particularly with aging and chronic diseases, and that this population sometimes encounters barriers to maintain adequate foot care, such as impaired dexterity, pain, difficulty in bending down, visual deficiency, etc.[13] The Mauricie-Centre-du-Québec region is particularly marked by demographic ageing.[14]

In addition, approximately 31% of the regional population lives in rural areas and our data shows a fairly similar proportion.[11] Moreover, the research data has shown that women consult more in primary care[15] and are more likely to suffer from foot pain,[16] which is similarly reflected in our audit data. Sex, age and place of residence are equity factors related to health care.[17] Rurality was identified as a barrier to access primary care foot health services.[18,19]

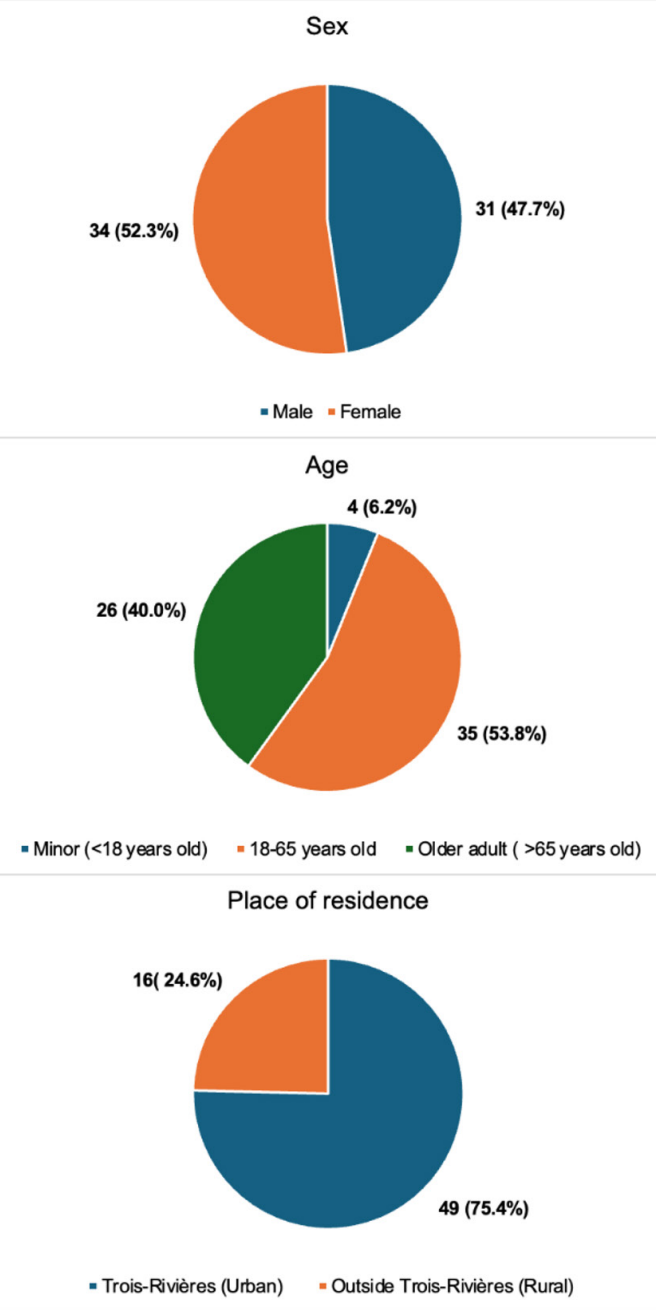


Figure 2: Sex, age and place of residence of the cases included in the audit

Indicator 3: Reason for consultation

The partnership led to a total of 168 consultations. The main reasons for consultation are presented in Figure 3. Approximately 17% of consultations were for primary or secondary prevention of diabetic feet or related wound care. This result is lower than expected considering that it was one of the three main categories of treatment targeted by the

UPMC and corresponded to a training need, which was diabetic foot disease. Foot and ankle problems affect 20 to 50% of individuals with diabetes and account for a high proportion of primary care consultations.[20]

Regarding the second category of treatment targeted by the UPMC, i.e., minor surgeries, the target was also not reached, since approximately 13% of consultations were related to ingrown toenails and only half of them led to minor surgery. There were no minor surgeries performed for warts or skin lesions.

Thirty-eight percent of the referred cases involved neuromusculoskeletal disorders, including diagnosis of neuropathy, tendinopathy, plantar fasciitis, capsulitis, foot deformities (flat feet, bunions, hammer toes), arthrosis, pain secondary to fibromyalgia, neuroma, tarsal tunnel syndrome, posterior tibial dysfunction and bursitis). The most common diagnosis was plantar fasciitis, which is consistent with the literature.[21] Women are more likely to consult for this type of problem in primary care.[22]

Finally, 32% of consultations were related to foot care, including nail cutting and removal of corns/calluses/keratoses for dermatology-related diagnosis, and patient education, which was not a category of care specifically targeted by the UPMC. Barriers to foot care, including diabetic foot care, in primary care have previously been identified as access, socioeconomic factors and a lack of service availability.[23] Our partnership has overcome all of these barriers to facilitate access and care for patients. Although our university is interested in promoting and supporting training and research in the area of diabetes-related foot complications, neuromusculoskeletal (symptomatic) needs remain one of the main reasons for consulting a podiatrist, especially related to aging and considering the increase of the prevalence of chronic deseases.[24]

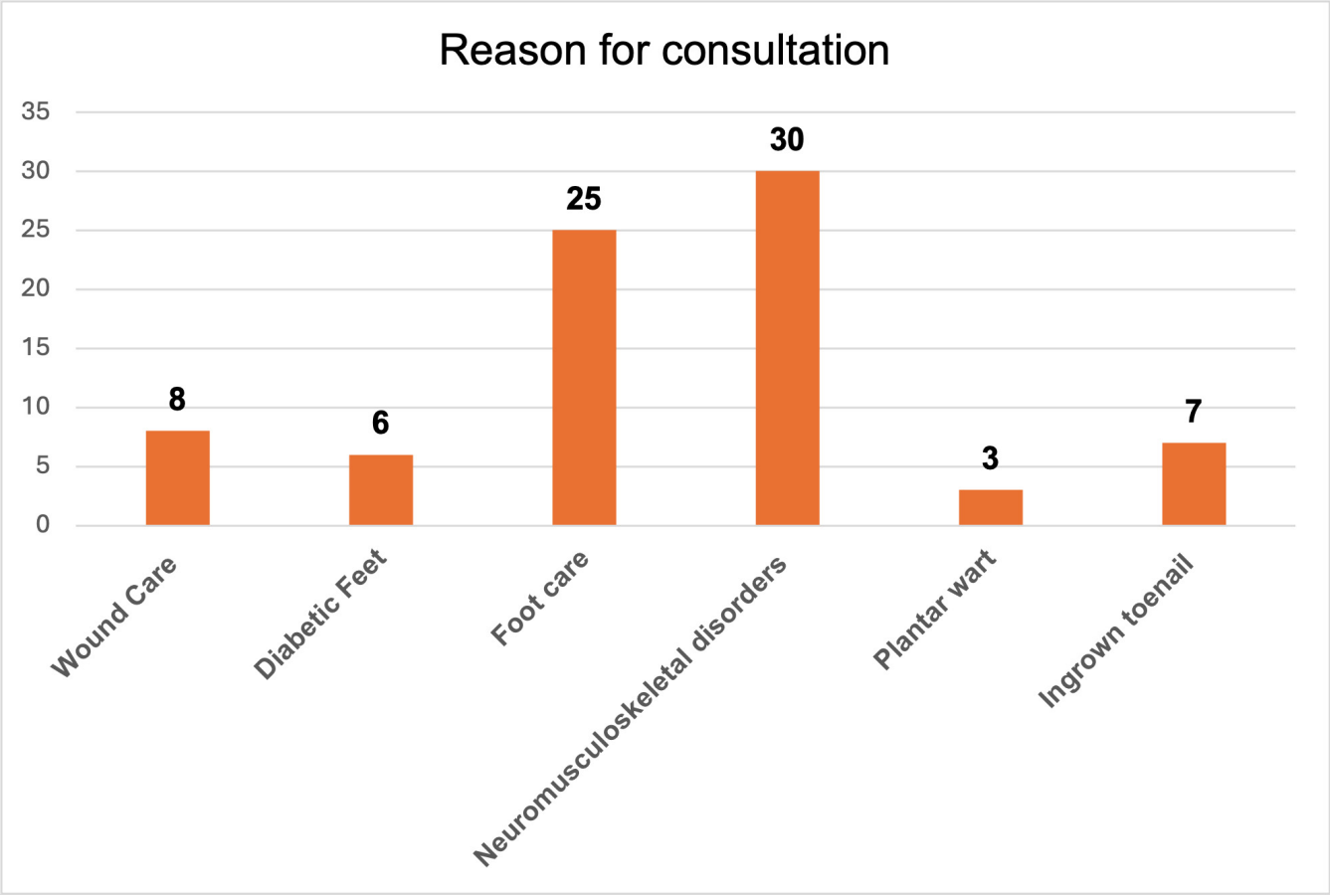


Figure 3: Reasons for consultation/diagnosis

Indicator 4: Follow-up

There was an average of 2.6 consultations per case. However, for 58% of cases, a single appointment was enough to resolve the issue within the four-month period retrospectively audited. One case alone accounted for 23 medical encounters for wound care, which slightly inflates the average. Feedback was provided to the referring physicians in 31% of cases. This does not comply with the instruction from the UPMC management (to students and supervisors) to make a follow-up report to the referring primary care physicians.

The number of follow-up consultations may be underestimated or incorrect, considering that we only monitored the first four months and that follow-ups may have taken place outside this period in some cases. As we analyzed successive cases, it is plausible that we missed follow-up visits, as some musculoskeletal diseases take a long time to heal (i.e., from six weeks to three months). It has been suggested in the literature that the number of consultations per patient ranged generally between one and 11 annually for foot and ankle problems in primary care.[22] This indicator has been achieved to a certain extent.

Indicator 5: Cost Incurred by the UPMC and the Patient

The total cost of the partnership with the UPMC was $10,027 CAD, which covered the initial and subsequent follow-up consultations. In the cases evaluated, patients had to pay a total of $4,155 CAD for expenses that would not have been covered by the public health system, e.g., foot orthotics, dressings, insoles, care products, specific medications, etc., In all cases, the average cost to the patient of their treatments was $64 CAD (minimum of $0 CAD for consultation only; maximum of $435 CAD for orthotic treatment) whereas for the UPMC, the average cost was $154 CAD (including initial consultation and subsequent follow-ups (minimum of $45 CAD for an initial consultation only; maximum of $1378 CAD for initial consultation and all follow-ups [wound care]). Some patients have been able to make claims to third-party payers, such as private insurance companies to cover their costs, but we do not have these details. This indicator has been achieved.

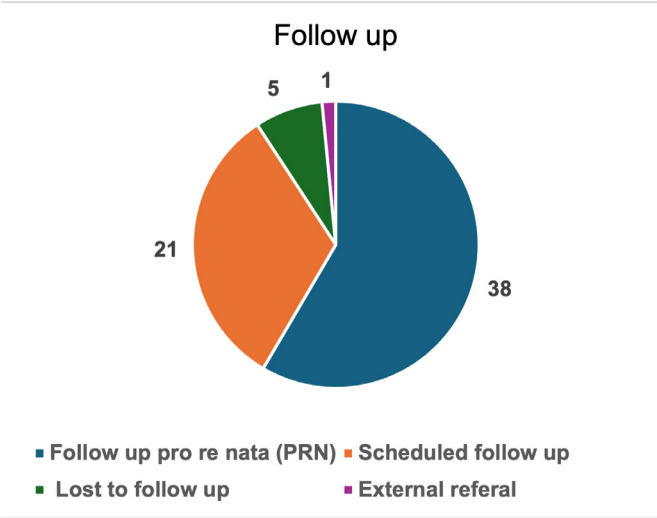


Figure 4: Follow-up

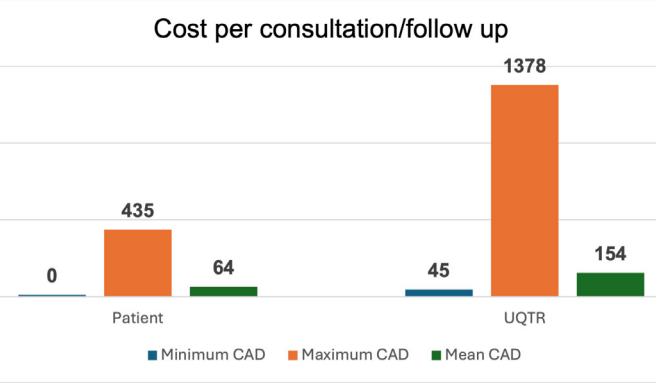


Figure 5: Cost in Canadian Dollars (CAD)

Subjective Indicator: Report on the Audit Process
Identifying cases from invoices was the easiest way to conduct this clinical audit. However, it would have been impossible to do so by going through the appointment system, as it is not possible to carry out data mining for specific data. The systems in place do not allow for easy retrieval of information, so it was necessary to search through patient files manually. This can lead to random and systematic errors in the accuracy of the data. The heterogeneity of information within the files, including the lack of standardized diagnosis, can lead to misinterpretation. Solutions to be explored undoubtedly include the use of information software to support rapid data searches within electronic medical files compatible with research and the use of coding to reduce the heterogeneity of treatments and diagnoses.[25] It was, unfortunately, not possible to find data on the experience of the stakeholders involved in this initiative (i.e. patients, clinicians, staff). In the future, it would be useful to implement an explicit feedback process for such initiatives. simultaneously. Indeed, improvements are needed to implement quality assessments for optimal care, teaching best practices and maximize the potential for clinical research within the UPMC.

Conclusion

The foot care trajectory between regional primary care providers and the UPCM should be better defined so that there is a common understanding of relevant cases for student training while meeting the needs of patients and primary care physicians. Against all expectations, the referred cases were more related to foot care and musculoskeletal disorders, which may reflect the regional characteristics of the ageing population and its needs. Although the initial idea was innovative, and the budget respected, the objectives were only partially achieved, even though the UPMC participation in the community's foot health services undoubtedly benefited from this primary care partnership. Before pursuing this type of initiative, it is necessary to better define the trajectory with our partners while improving our internal processes to enable us to evaluate the quality of care and impact of the investment.

Action Plan

Another audit is not planned for the moment. This audit demonstrates the urgency of developing and implementing a foot health care pathway between publicly-funded primary care clinics and the UPMC within the CIUSSS-MCQ's territory. We must not wait for another health crisis and other obstacles, or even budget renewal. Considering that the UPMC is part of the regional health system, action is needed to publicize available services, thus eliminating referral barriers, which are an obstacle to welcoming patients in need. Moreover, the budget allocated for this project was exceptional. However, it would still be appropriate for the University to investigate a sustainable long-term funding model, particularly to contribute to the community for the most vulnerable populations, and/or to meet training needs. There are already community partnership initiatives at UPCM (e.g., with COMPSEP [the Mauritian Organization Center for Services and Popular Education] which is a community organization bringing together individuals and families living in poverty), Municipal Housing Office of Trois-Rivières (OMH-TR); and for the members of Diabetes Mauricie, but we don't understand the impact of the UPCM (financial or otherwise). On the other hand, it would be a great opportunity to align these implications with the institutional strategic plan.

The audit revealed a gap in follow-up communication with referring physicians (only 31% compliance), despite clear request from the clinical director (MPM). Therefore, program and clinical leadership will need to look at concrete solutions with program committees, supervisors (professors and lecturers) and students, such as implementing mandatory procedure in the UPMC clinical practice guidelines for referral pathways and levers impacting student assessments. Considering that it has no accreditation within the podiatric medicine program, being the only one in Canada, it is important that indicators of the quality of care, indicators of the quality of teaching and the

minimum competencies required by students be developed, implemented and validated within the institution and across program-related clinical settings such as UPMC. Efforts have been made to establish a competency framework for podiatry training aligned with Québec College of podiatry and context,[26,27] but this project is slow to be implemented and prioritized.

Research projects could be set up to define and harmonize the expectations of both primary care clinics and the UPMC or other fee-for-service community podiatry clinics. This would allow podiatric medicine to take its rightful place within the primary health-care system, particularly within interprofessional teams. It might also be useful to obtain data to establish the podiatrist as a specialized professional in the professional services request form of the Regional Service Request Distribution Centre or, more easily, the podiatrist as professional services available in public establishments in the same way as occupational therapists, physiotherapists and stoma therapists. That makes it possible to limit requests to certain reasons for consultation, depending on locally available resources and the priorities determined by the CIUSSS. After all, considering that Trois-Rivières is the incubator of podiatric medicine education in Québec, the research and the methods can be useful and serve as an example for all of Québec. Due to its position, the UQTR has a political and organizational leadership role to play.

Finally, this audit also highlighted the difficulty of finding data in the clinical system and the heterogeneity of the information indexed. It is essential that the clinic develop a concrete audit and research plan with the stakeholders to facilitate data mining to ensure quality control and maximize the potential of an academic clinic for research projects.

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References

1. Ordre des podiatres du Québec. Qu'est-ce qu'un podiatre? Avaialable from: http://ordredespodiatres.qc.ca/public/quest-ce-quun-podiatre/
2. UQTR. Doctorat de premier cycle en médecine podiatrique [dissertation]. Québec (QC): Université du Québec à Trois-Rivières; 2017.
3. Mochon R, Rose M, Blanchette V, Fait P, Corbin-Berrigan LA. Exploring workload, satisfaction and sense of safety of health care professionals dealing with musculoskeletal conditions in out-patient clinics during the COVID-19 pandemic. Musculoskeletal Care. 2023 Sep;21(3):926-931.
4. Etz RS, Solid CA, Gonzalez MM, Britton E, Stange KC, Reves SR. Telemedicine in Primary Care: Lessons Learned About Implementing Health Care Innovations During the COVID-19 Pandemic. Ann Fam Med. 2023 Jul-Aug;21(4):297-304.
5. Lin S, Sattler A, Smith M. Retooling primary care in the COVID-19 era. Elsevier; 2020:1831-1834.
6. Blanchette V, Hains S, Cloutier L. Establishing a multidisciplinary partnership integrating podiatric care into the Québec public health-care system to improve diabetic foot outcomes: A retrospective cohort. Foot (Edinb). 2019 Mar;38:54-60.
7. Paige NM, Nouvong A. The top 10 things foot and ankle specialists wish every primary care physician knew. Elsevier; 2006:818-822.
8. Chadwick P, Ambrose L, Barrow R, Fox M. A commentary on podiatry during the Covid-19 pandemic : Podiatry during the Covid-19 pandemic. J Foot Ankle Res. 2020 Oct 15;13(1):63.
9. Government of Canada. Panel on Resesarch Ethics. Tri-council policy statement: ethical conduct for research involving humans – TCPS 2 (2018). Available from: https://ethics.gc.ca/eng/documents/tcps2-2018-en-interactive-final.pdf
10. Godwin M. Conducting a clinical practice audit. Fourteen steps to better patient care. Can Fam Physician. 2001 Nov;47:2331-3.
11. Un regard averti sur l'état de santé de la population de la Maurie et du Centre-du-Québec. 2019.
12. Statistic Canada. Census profile: region de la Mauricie et Centre-du-Québec. Gouverrnement of Canada. Available from: https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=HR&Code1=2404&Geo2=PR&Code2=24&SearchText=Region%20de%20la%20Mauricie%20et%20Centre-du-Québec&SearchType=Begins&SearchPR=01&B1=All&GeoLevel=PR&GeoCode=2404&TABID=1&type=0
13. Ordre des podiatres du Québec. Qu'est-ce qu'un podiatre? Avaialable from: http://ordredespodiatres.qc.ca/public/quest-ce-quun-podiatre/
14. UQTR. Doctorat de premier cycle en médecine podiatrique [dissertation]. Québec (QC): Université du Québec à Trois-Rivières; 2017.
15. Mochon R, Rose M, Blanchette V, Fait P, Corbin-Berrigan LA. Exploring workload, satisfaction and sense of safety of health care professionals dealing with musculoskeletal conditions in out-patient clinics during the COVID-19 pandemic. Musculoskeletal Care. 2023 Sep;21(3):926-931.
16. Etz RS, Solid CA, Gonzalez MM, Britton E, Stange KC, Reves SR. Telemedicine in Primary Care: Lessons Learned About Implementing Health Care Innovations During the COVID-19 Pandemic. Ann Fam Med. 2023 Jul-Aug;21(4):297-304.
17. Lin S, Sattler A, Smith M. Retooling primary care in the COVID-19 era. Elsevier; 2020:1831-1834.
18. Blanchette V, Hains S, Cloutier L. Establishing a multidisciplinary partnership integrating podiatric care into the Québec public health-care system to improve diabetic foot outcomes: A retrospective cohort. Foot (Edinb). 2019 Mar;38:54-60.
19. Paige NM, Nouvong A. The top 10 things foot and ankle specialists wish every primary care physician knew. Elsevier; 2006:818-822.
20. Chadwick P, Ambrose L, Barrow R, Fox M. A commentary on podiatry during the Covid-19 pandemic : Podiatry during the Covid-19 pandemic. J Foot Ankle Res. 2020 Oct 15;13(1):63.
21. Government of Canada. Panel on Resesarch Ethics. Tri-council policy statement: ethical conduct for research involving humans – TCPS 2 (2018). Available from: https://ethics.gc.ca/eng/documents/tcps2-2018-en-interactive-final.pdf
22. Godwin M. Conducting a clinical practice audit. Fourteen steps to better patient care. Can Fam Physician. 2001 Nov;47:2331-3.
23. Un regard averti sur l'état de santé de la population de la Maurie et du Centre-du-Québec. 2019.
24. Statistic Canada. Census profile: region de la Mauricie et Centre-du-Québec. Gouverrnement of Canada. Available from: https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=HR&Code1=2404&Geo2=PR&Code2=24&SearchText=Region%20de%20la%20Mauricie%20et%20Centre-du-Québec&SearchType=Begins&SearchPR=01&B1=All&GeoLevel=PR&GeoCode=2404&TABID=1&type=0
25. James K, Orkaby AR, Schwartz AW. Foot Examination for Older Adults. Am J Med. 2021 Jan;134(1):30-35.
26. Thouez JP, Bussière Y. Vieillissement de la population et déséquilibres démographiques au Québec, 2001-2021. Canadian Journal of Regional Science/Revue canadienne des sciences régionales. 2008 Jul 1;31(2).
27. Hunt K, Ford G, Harkins L, Wyke S. Are women more ready to consult than men? Gender differences in family practitioner consultation for common chronic conditions. J Health Serv Res Policy. 1999 Apr;4(2):96-100.
28. Guidozzi F. Foot problems in older women. Climacteric. 2017 Dec;20(6):518-521.
29. O'Neill J, Tabish H, Welch V, Petticrew M, Pottie K, Clarke M, et al. Applying an equity lens to interventions: using PROGRESS ensures consideration of socially stratifying factors to illuminate inequities in health. J Clin Epidemiol. 2014 Jan;67(1):56-64.
30. Corscadden L, Levesque JF, Lewis V, Strumpf E, Breton M, Russell G. Factors associated with multiple barriers to access to primary care: an international analysis. Int J Equity Health. 2018 Feb 20;17(1):28.
31. Tehan PE, Donnelly H, Martin E, Peterson B, Hawke F. Experiences and impact of a rural Australian high-risk foot service: A multiple-methods study. Aust J Rural Health. 2024 Apr;32(2):286-298.
32. Menz HB, Williams CM, Lazzarini PA, Gordon J, Harrison C. Foot, ankle, and leg problems in Australian primary care:

consultation patterns, management practices, and costs. Fam Pract. 2024 Aug 14;41(4):426-433.
33. Rhim HC, Kwon J, Park J, Borg-Stein J, Tenforde AS. A systematic review of systematic reviews on the epidemiology, evaluation, and treatment of plantar fasciitis. Life (Basel). 2021 Nov 24;11(12):1287.
34. 22. Menz HB, Jordan KP, Roddy E, Croft PR. Characteristics of primary care consultations for musculoskeletal foot and ankle problems in the UK. Rheumatology (Oxford). 2010 Jul;49(7):1391-8.
35. McPherson M, Carroll M, Stewart S. Patient-perceived and practitioner-perceived barriers to accessing foot care services for people with diabetes mellitus: a systematic literature review. J Foot Ankle Res. 2022 Dec 16;15(1):92.
36. Bennett PJ. Types of foot problems seen by Australian podiatrists. Foot (Edinb). 2012 Mar;22(1):40-5.
37. Blundell J. Health information and the importance of clinical coding. Anaesthesia & Intensive Care Medicine. 2023 Feb 1;24(2):96-8.
38. 26. Andoulsi Y, Hue O, Brousseau M, Hill J, Alleyne J, Blanchette V. Competency framework for podiatric medicine training: a validation report based on an adapted e-delphi across Canada. J Med Educ Curric Dev. 2024 Feb 26;11:23821205241234974.
39. 27. Blanchette V, Andoulsi Y, Brousseau M, Leblanc C, Guillemette F, Hue O. Competency framework for podiatric medicine training in canada: an adapted Delphi Study. Adv Med Educ Pract. 2022 Oct 1;13:1207-1241.