

Canadians' willingness to receive care from physician assistants

Quynh Doan MDCM MHSc FRCPC Roderick S. Hooker MBA PhD Hubert Wong PhD Joel Singer MA PhD
Sam Sheps MSc PhD MD FRCPC Niranjan Kissoon MD FRCPC FAAP FCCM David Johnson MD FRCPC

Abstract

Objective To determine the willingness of Canadians to accept treatment from physician assistants (PAs).

Design Respondents were asked to be surrogate patients or parents under 1 of 3 conditions selected at random. Two scenarios involved injury to themselves, with the third involving injury to their children. The wait time for a physician was assumed to be 4 hours, whereas to explore the sensitivity of patients' preferences for a range of times, PA wait times were 30 minutes, 1 hour, and 2 hours.

Setting Vancouver, BC.

Participants Two hundred twenty-nine mothers attending a hospital with their children.

Main outcome measures The main outcome measure was the proportion of individuals in each scenario who were willing to be treated by PAs for at least one of the time trade-off options offered. A secondary outcome was the proportion of individuals who changed their answers when the waiting time to see the PA varied.

Results Regardless of the scenarios, 99% of participants opted for PAs under the personal circumstances; 96% opted for PAs when the issue involved their children. The choice favouring the PA persisted, albeit at slightly lower proportions, as the difference in wait time between PAs and physicians decreased (85% and 67% for a difference in PA and physician wait time of 3 and 2 hours, respectively).

Conclusion These findings suggest that British Columbians are willing to be treated by PAs under most circumstances, whether this includes themselves or their children. The high level of willingness to be treated by PAs demonstrates public confidence in PA care, and suggests that the use of PAs in Canadian emergency departments or clinics is a viable policy response to decreasing primary care capacity.

EDITOR'S KEY POINTS

- As Canadians are faced with decreasing health care human resources, calls for innovative and cost-efficient solutions have abounded. The use of one alternative provider resource, physician assistants (PAs), has been debated in Canada since the early 1990s.
- While there are reports of Canadians' willingness to receive care from nurse practitioners for minor problems, and high patient satisfaction with nurse practitioner care in the emergency department, the PA's role and clinical scope of practice remain unfamiliar to many Canadian health care users and providers.
- The results of this study suggest that mothers in British Columbia previously unaware of PAs would accept PA care over physician care in exchange for shorter wait times of as little as 2 hours less than waiting for a physician, for a variety of minor injury scenarios.

This article has been peer reviewed.
Can Fam Physician 2012;58:e459-64

Les Canadiens acceptent-ils facilement d'être traités par des auxiliaires médicaux?

Quynh Doan MDCM MHSc FRCPC Roderick S. Hooker MBA PhD Hubert Wong PhD Joel Singer MA PhD
Sam Sheps MSc PhD MD FRCPC Niranjn Kisson MD FRCPC FAAP FCCM David Johnson MD FRCPC

Résumé

Objectif Déterminer à quel point les canadiens acceptent d'être traités par des auxiliaires médicaux (AM).

Type d'étude On a demandé aux répondants de jouer le rôle de patients ou de parents dans 1 de 3 scénarios choisis au hasard. Deux des scénarios portaient sur des blessures subies par eux-mêmes, le troisième sur des blessures subies par leurs enfants. On a supposé qu'il fallait attendre 4 heures pour voir un médecin, tandis que pour évaluer la tolérance des patients à l'égard d'une échelle de durées, les temps d'attente pour les AM étaient de 30 minutes, 1 heure et 2 heures, respectivement.

Contexte Vancouver, C.-B.

Participants Un total de 29 mères venues à l'hôpital avec leur enfant.

Principaux paramètres à l'étude Le principal paramètre mesuré était la proportion des personnes de chaque scénario qui étaient d'accord pour être traitées par des AM pour au moins un des choix de temps d'attente offerts. Un paramètre secondaire était la proportion des sujets qui modifiaient leur réponse lorsque le temps d'attente pour voir un AM variait.

Résultats Quel que soit le scénario, 99 % des participantes ont choisi l'AM pour des blessures personnelles; 96 % ont opté pour l'AM pour des blessures à leur enfant. L'option en faveur des AM persistait, quoiqu'à un degré légèrement moindre, quand la différence entre les temps d'attente entre l'AM et le médecin diminuait (85 % et 67 % pour des différences de temps d'attente de 3 et 2 heures, respectivement).

Conclusion Ces résultats laissent entendre que les Britanno-Colombiens acceptent volontiers d'être traités par des AM dans la plupart des circonstances, que ce soit pour eux-mêmes ou pour leurs enfants. Ce haut niveau d'acceptation montre que le public est confiant d'être bien traité par les AM, et donne à croire que l'utilisation des AM dans les départements d'urgence ou les cliniques est un choix raisonnable pour pallier la diminution des ressources en santé primaire.

POINTS DE REPÈRE DU RÉDACTEUR

- Les Canadiens font face à une diminution des ressources humaines dans les soins de santé et de nombreuses solutions innovatrices avec un bon rapport coût-efficacité ont été proposées. Le recours à des soignants alternatifs, les auxiliaires médicaux (AM), a fait l'objet de discussions au Canada depuis le début des années 1990.
- Malgré les rapports indiquant que les Canadiens acceptent volontiers d'être traités par des infirmières praticiennes pour des problèmes mineurs et que les patients se sont dits très satisfaits des soins de ces infirmières dans les départements d'urgence, le rôle des AM et le spectre de leur champ de pratique clinique demeure peu connu des soignants comme des patients.
- Les résultats de cette étude laissent entendre que des mères de Colombie-Britannique qui ne connaissaient pas les AM accepteraient de recevoir des soins d'un AM plutôt que d'un médecin, en échange d'un raccourcissement du temps d'attente d'à peine 2 heures par rapport au temps d'attente pour le médecin et ce, pour divers scénarios de blessures mineures.

Cet article a fait l'objet d'une révision par des pairs.
Can Fam Physician 2012;58:e459-64

It is becoming increasingly difficult for Canadians to find family physicians or access immediate care for minor health problems.¹⁻³ Geographic maldistribution of family physicians' practices, increased medical specialization, and decreasing work hours, among other causes, have contributed to primary care capacity shortages and longer wait times.⁴⁻⁶ As Canadians are faced with decreasing health care human resources, calls for innovative and cost-efficient solutions have abounded. The use of one alternative provider resource, physician assistants (PAs), has been debated in Canada since the early 1990s.⁷⁻⁹ Physician assistants are fully licensed medical practitioners who provide care under the direction and supervision of physicians. The use of PAs is common in the United States, and has resulted in high patient satisfaction and acceptance by other health care providers.¹⁰⁻¹² The Canadian Forces have used PAs since the 1990s, and approximately 130 Canadian Forces PAs currently provide medical care to Canadian troops and their families abroad. In 1999, Manitoba became the first Canadian province to establish licensing and registration for PAs; the Canadian Medical Association recognized PAs in 2004.¹³ New Brunswick, Alberta, and Ontario employ PAs, and other provinces are examining this option. In Canada, PA training consists of a 2-year masters' degree program that is now offered at the University of Manitoba in Winnipeg or a 2-year undergraduate program for students who have already completed 2 years of a university science program, offered at McMaster University in Hamilton, Ont. These comprise 1 year of science courses and 1 year of clinical training. Many PAs are trained nurses or paramedics. Physician assistants all train as generalists and many enter specialty and subspecialty areas, particularly in emergency medicine. Their scope of practice includes complete patient assessment, initiation of clinical investigations, and patient treatment under the supervision of physicians who are on-site or available for consultation. The level of practice of a PA is often compared with that of a senior medical resident, except that the PA stays on for the duration of employment rather than a 1-month rotation.

Although physicians are ultimately responsible for PAs, PAs exercise autonomy in medical decision making, and the supervising physicians establish the degree of direct supervision. This is in contrast to the nurse practitioner (NP) profession, which provides a combination of advanced nursing and medical care (graduate degree after nursing degree) but is grounded in the nursing model and without formal supervision from a physician.

There is growing interest in introducing PAs into the Canadian health care system as a means to expand the medical work force and to enhance timely access to health care services. This is particularly evident in emergency departments (EDs), where their use improves patient flow.¹⁴

While there are reports of Canadians' willingness to receive care from NPs for minor problems,¹⁵ and high patient satisfaction with NP care in the ED,¹⁶ the PA's role and clinical scope of practice remain unfamiliar to many Canadian health care users and providers. To our knowledge no surveys assessing the preference of Canadians about PAs in primary or urgent care have been published.

Previous research has provided mixed results. A 2003 survey of patients attending American EDs found that only 57% were willing to be treated by a PA when given the choice in a series of hypothetical scenarios about mild, moderate, and severe injuries or illnesses.¹⁷ However, a similar study from Australia that asked patients their preferences when offered shorter wait times for PAs than for family physicians found most respondents were willing to be treated by PAs, regardless of the injury scenario.¹⁸ Given the wide difference in acceptance of PAs between these studies in 2 countries, we wished to explore Canadians' willingness to be treated by PAs using a similar questionnaire design.

METHODS

Design and population

To assess Canadians' willingness to be treated by PAs, we surveyed mothers accompanying their children to the BC Children's Hospital, a tertiary care facility in Vancouver, BC. Each participant was given a brief description of PA training and scope of practice, as well as those of a physician. Patients familiar with PAs (experience being treated by a PA) were excluded. Women were selected because they were the largest segment of respondents in pilot studies in the United States and Australia, thus providing comparative data. For each scenario, a common condition was selected that could be easily identified by the respondents and readily managed in a family medicine clinic. An international panel, including family physicians and researchers, selected the scenarios to be applicable in different countries under different settings (such as urban or remote) and translatable for validation purposes.

Each participant was presented with 1 of 3 injury scenarios randomly selected by means of sealed envelopes: a sprained ankle, a forearm laceration, or a 4-year-old child with a forehead laceration. Participants were asked to assume the role of the patient in scenarios 1 and 2, and the role of the parent in scenario 3. Participants were asked to choose between receiving care from a physician or a PA based on a waiting time trade-off. The first choice provided the option of waiting 4 hours to see the physician or 1 hour to see the PA. After making that initial time selection, the second choice was an option of waiting for the physician for

4 hours, or waiting for a PA for 30 minutes. The third option was seeing the physician in 4 hours versus seeing a PA in 2 hours. Demographic information such as age, ethnic background, and location of residence (in metropolitan Vancouver) was also collected.

Analysis

Descriptive statistics were used to summarize participants' demographic characteristics for each of the 3 scenarios tested. The primary outcome was the proportion of individuals in each scenario who were willing to be treated by PAs for at least one of the time trade-off options offered (presumably with the greatest waiting time reduction). A secondary outcome was the proportion of individuals who changed their answers when the waiting time to see the PA varied, evaluated as the proportion of individuals willing to see PAs across the 3 scenarios using χ^2 tests.

A planned sample size of 77 participants per group was chosen to achieve 7.5% precision with 90% confidence in the estimate of the proportion of responses favourable to PAs, derived under the assumption that the true proportion was 80% (a conservative estimate). This study received ethics approval from the Children's & Women's Health Centre (Vancouver) Research Review Committee and the

University of British Columbia Behavioural Research Ethics Board. All subjects participated anonymously but provided signed informed consent.

RESULTS

We approached 306 potential participants. Of this group, 29 were familiar with PAs and thus excluded, 3 had been previously enrolled in the study, and 4 could not provide consent owing to language barriers. Forty-one mothers declined to participate; therefore, the participation rate among the 270 eligible respondents was 85%. The mean age of respondents was 34 years. Half (52%) were white and 40% were Asian (Table 1).

There was almost unanimous selection of PAs (99%) for the 2 scenarios involving personal injury. A slightly lower proportion (96%) favoured the PA in the scenario involving the child. This willingness to see a PA for any scenario was observed at each time trade-off option, but the difference between scenarios was statistically significant ($P=.03$) at the longest wait time for the PA (2 hours for the PA vs 4 hours for the physician) (Table 2). We observed that, across the scenarios, most of the respondents chose a PA despite the varying waiting

Table 1. Distribution of demographic characteristics for each injury scenario group: N = 229.

CHARACTERISTIC	ANKLE SPRAIN SCENARIO (N = 78)	FOREARM LACERATION SCENARIO (N = 75)	CHILD FOREHEAD LACERATION SCENARIO (N = 76)	TOTAL STUDY POPULATION (N = 229)
Mean (SD) age, y	34 (8.3)	34 (8.3)	34 (10.2)	34 (8.8)
Respondents living in Vancouver, n (%)	45 (58)	52 (69)	42 (55)	139 (61)
Respondents presenting to ED, n (%)	69 (88)	64 (85)	71 (93)	204 (89)
Ethnicity, n (%)				
• Asian	34 (44)	21 (28)	37 (49)	92 (40)
• White	38 (49)	46 (61)	34 (45)	118 (52)
• First Nations	1 (1)	4 (5)	3 (4)	8 (3)
• Hispanic	4 (5)	3 (4)	2 (3)	9 (4)
• African	1 (1)	1 (1)	0 (0)	2 (1)

ED—emergency department.

Table 2. Proportion of participants choosing to be seen by a PA, by injury scenario for each time trade-off option

WAITING TIME OPTION	PROPORTION (95% CI)* OF PARTICIPANTS WILLING TO SEE A PA			P VALUE FOR DIFFERENCE ACROSS SCENARIOS
	ANKLE SPRAIN SCENARIO	FOREARM LACERATION SCENARIO	CHILD FOREHEAD LACERATION SCENARIO	
PA for at least 1 time trade-off option	99 (93-100)	99 (93-100)	96 (89-99)	.43
PA 2 h vs MD 4 h	86 (76-93)	85 (75-92)	67 (55-75)	.03 [†]
PA 1 h vs MD 4 h	92 (84-97)	96 (89-99)	88 (79-94)	.20
PA 30 min vs MD 4 h	99 (93-100)	99 (93-100)	96 (89-99)	.43

MD—physician, PA—physician assistant.

*The percentages in this sample are also estimates of the population-level percentages; the reported CIs reflect the precision of these estimates, considering the number of responses and assuming that the sample reflects a simple random sample from the population.

[†]Statistically significant difference.

time. Changing the wait time resulted in 14% (95% CI 7% to 23%) of survey respondents changing their responses for the adult injury scenario and 29% (95% CI 19% to 41%) changing their responses for the pediatric laceration scenario.

DISCUSSION

The results of our study suggest that mothers in British Columbia previously unaware of PAs would accept PA care over physician care in exchange for shorter wait times of as little as 2 hours less than waiting for a physician, for all of the clinical scenarios we presented. Respondents overwhelmingly opted for PA care, but were willing to wait longer to see a physician in the case of the injured-child scenario compared with the scenarios in which the participant assumed the role of the patient. All 3 cases would be categorized as level 4 (semiurgent) using the Canadian Triage and Acuity Scale¹⁹ (and its pediatric version),²⁰ where level 1 is the highest acuity (needs resuscitation) and level 5 is the lowest (nonurgent). However, if presenting to the ED, it is possible that respondents perceived the pediatric forehead laceration to be more severe than we intended. Whether the relative reluctance to have a PA manage the pediatric case is a reflection of perceived acuity of the injury or willingness to wait longer when it involves their child requires further exploration. The determinants of willingness to accept care by a PA for pediatric concerns warrant a deeper assessment; this exceeds the scope of this study's objective, which was to explore health care users' willingness to receive care from PAs.

Our findings are consistent with an Australian study that assessed willingness to be treated by PAs for similar injuries.¹⁸ Minor differences distinguish these 2 studies. The Australian study varied both the waiting time to see the PA and the waiting time to see the physician. In addition, all but 2 of 225 of their respondents chose to be treated by PAs across all 3 scenarios and at all time trade-offs; hence, there was no observed effect from varying the injury scenario or the waiting time reduction.

Although our study suggests acceptance of PAs as health care providers among a sample of Canadian women, the choice of using a scenario-based survey rather than asking about participants' willingness to be treated by PAs for the health complaint for which they presented at the time of enrolment limits the generalizability of our findings to minor injury scenarios. This would, however, be a likely scenario for actual need for immediate care access.

In addition, our intent was to shape the results of this study to help us understand the Canadian perspective and for international utility. We wanted to be able to apply the results of this study in Europe and Australasia,

where using PAs is also a novel concept being considered, if not debated. The use of scenarios, although limiting in generalizability, allowed for standardizing the context in which willingness to be treated by PAs could be assessed and potentially compared across study populations.

A study of PAs working in Manitoba found similar acceptance by patients when cared for by PAs.²¹ More than 90% of surveyed patients believed that PAs were important team members, and using them was a good idea.

Conclusion

The use of PAs for acute but nonemergency care provision is not new. Almost from their debut on the American stage in the late 1960s they were employed in general medicine as well as in EDs, and have provided care to patients with lower acuity complaints and primary health problems.^{22,23} A systematic review of the literature on PAs in primary care systems shows that PAs are well suited to providing integrated care within family medicine clinics, enhancing access to safe and timely care while being cost-efficient to employers.²⁴ Although PAs are new to health care users in Canada, this research suggests that patients are willing to receive care from PAs. This finding adds to the nascent body of literature supporting the use of PAs in the Canadian health care system. We suggest this work sets up the next phase for research on the use of PAs—team-based care, chronic care scenarios, care of older adults, comparison with NPs, and assessing the outcomes of care. 🌱

Dr Doan is Clinical Assistant Professor in the Department of Pediatrics, and is a graduate student in the School of Population and Public Health, both at the University of British Columbia (UBC) in Vancouver. **Dr Hooker** is a researcher in the School of Public Health at the University of North Texas Health Sciences Center in Fort Worth, and is a physician assistant in Falls Church, Va.

Dr Kissoon is Associate Head and Professor in the Department of Pediatrics at UBC, and is Vice President of Medical Affairs at BC Children's Hospital and Sunny Hill Health Centre for Children, both in Vancouver. **Dr Singer** is Professor in the School of Population and Public Health at UBC, Programme Head of the Canadian Institutes of Health Research Canadian HIV Trials Network, and Research Scientist at the Centre for Health Evaluation and Outcome Sciences in Vancouver. **Dr Sheps** is Professor and Director of the graduate studies program in the School of Population and Public Health, Director of the Western Regional Training Centre, and a faculty member of the Centre for Health Services and Policy Research, all at UBC. **Dr Wong** is Associate Professor in the School of Population and Public Health at UBC.

Dr Johnson is Professor in the Department of Pediatrics and the Department of Physiology and Pharmacology at the University of Calgary in Alberta.

Contributors

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

Competing interests

None declared

Correspondence

Dr Quynh Doan, BC Children's Hospital Emergency Department, University of British Columbia, 4480 Oak St, Vancouver, BC V6H 3V4; telephone 604 616-8825; fax 604 875-3076; e-mail qdoan@cw.bc.ca

References

- Gagnon L. Stats Can: 14% of Canadians have no family doctor. *CMAJ* 2004;171(2):124.
- Sanmartin C, Ross N. Experiencing difficulties accessing first-contact health services in Canada: Canadians without regular doctors and recent immigrants have difficulties accessing first-contact healthcare services. Reports

- of difficulties in accessing care vary by age, sex and region. *Health Policy* 2006;1(2):103-19.
3. The Primary Care Wait Time Partnership. *The wait starts here. Final report*. Mississauga, ON: College of Family Physicians of Canada; 2009. Available from: www.cfpc.ca/uploadedFiles/Resources/Resource_Items/ENGLISH20PCWTP20FINAL20-20DECEMBER202009.pdf. Accessed 2012 Jul 4.
 4. MacKean P, Gutkin C. Fewer medical students selecting family medicine. Can family practice survive? *Can Fam Physician* 2003;49:408-9 (Eng), 415-7 (Fr).
 5. Pong RW, Pitblado JR. *Geographic distribution of physicians in Canada: beyond how many and where*. Ottawa, ON: Canadian Institute for Health Information; 2005. Available from: https://secure.cihi.ca/free_products/Geographic_Distribution_of_Physicians_FINAL_e.pdf. Accessed 2012 Jul 4.
 6. Watson DE, Katz A, Reid RJ, Bogdanovic B, Roos N, Heppner P. Family physician workloads and access to care in Winnipeg: 1991 to 2001. *CMAJ* 2004;171(4):339-42.
 7. Brethour I, Carlson G, Patterson G, Sun C, Williams T. *The physician assistant in primary care: a proposal for British Columbia's health care system*. Victoria, BC: BC Ministry of Health; 1994.
 8. British Columbia Medical Association. *Working together—enhancing multi-disciplinary primary care in British Columbia: a policy paper by BC's physicians*. Vancouver, BC: British Columbia Medical Association; 2005.
 9. British Columbia Medical Association [website]. *Physician assistants*. Vancouver, BC: British Columbia Medical Association; 2009. Available from: www.bcma.org/files/Physician_Assistants.pdf. Accessed 2010 Jul 18.
 10. Counselman FL, Graffeo CA, Hill JT. Patient satisfaction with physician assistants (PAs) in an ED fast track. *Am J Emerg Med* 2000;18(6):661-5.
 11. Ellis GL, Brandt TE. Use of physician extenders and fast tracks in United States emergency departments. *Am J Emerg Med* 1997;15(3):229-32.
 12. Nyberg SM, Waswick W, Wynn T, Keuter K. Midlevel providers in a level I trauma service: experience at Wesley Medical Center. *J Trauma* 2007;63(1):128-34.
 13. Jones IW, Hooker RS. Physician assistants in Canada. Update on health policy initiatives. *Can Fam Physician* 2011;57:e83-8. Available from: www.cfp.ca/content/57/3/e83.full.pdf+html. Accessed 2012 Jul 4.
 14. Ducharme J, Alder RJ, Pelletier C, Murray D, Tepper J. The impact on patient flow after the integration of nurse practitioners and physician assistants in 6 Ontario emergency departments. *CJEM* 2009;11(5):455-61.
 15. Moser MS, Abu-Laban RB, van Beek CA. Attitudes of emergency department patients with minor problems to being treated by a nurse practitioner. *CJEM* 2004;6(4):246-52.
 16. Thrasher C, Purc-Stephenson R. Patient satisfaction with nurse practitioner care in emergency departments in Canada. *J Am Acad Nurse Pract* 2008;20(5):231-7.
 17. Larkin GL, Hooker RS. Patient willingness to be seen by physician assistants, nurse practitioners, and residents in the emergency department: does the presumption of consent have an empirical basis? *Am J Bioeth* 2010;10(8):1-10.
 18. Hooker RS, Harrison K, Pashen D. Are Australians willing to be treated by a physician assistant? *Australas Med J* 2010;3(7):407-13.
 19. Bullard MJ, Unger B, Spence J, Grafstein E; CTAS National Working Group. Revisions to the Canadian Emergency Department Triage and Acuity. ED administration. *CJEM* 2008;10(2):136-42.
 20. Warren DW, Jarvis A, LeBlanc I, Gravel J; CTAS National Working Group. Revisions to the Canadian Triage and Acuity Scale paediatric guidelines (PaedCTAS). *CJEM* 2008;10(3):224-32.
 21. Bohm ER, Dunbar M, Pitman D, Rhule C, Araneta J. Experience with physician assistants in a Canadian arthroplasty program. *Can J Surg* 2010;53(2):103-8.
 22. Hooker RS, Klocko DJ, Larkin GL. Physician assistants in emergency medicine: the impact of their role. *Acad Emerg Med* 2011;18(1):72-7. Epub 2010 Dec 16.
 23. Doan Q, Sabhaney V, Kisson N, Sheps S, Singer J. A systematic review: the role and impact of the physician assistant in the emergency department. *Emerg Med Australas* 2011;23(1):7-15. Epub 2011 Jan 20.
 24. Hooker RS, Everett CM. The contributions of physician assistants in primary care systems. *Health Soc Care Community* 2012;20(1):20-31. Epub 2011 Aug 18.
