

Utilizing the physician assistant role: case study in an upper-extremity orthopedic surgical program

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Background: Shortages with resources and inefficiencies with orthopedic services in Canada create opportunities for alternative staffing models and ways to use existing resources. Physician assistants (PAs) are a common provider used in specialty orthopedic services in the United States; however, Canada has limited experience with PAs. As part of a larger demonstration project, Alberta Health Services (AHS) implemented 1 PA position in an upper-extremity surgical program in Alberta, Canada, to demonstrate the role in 4 areas: preoperative, operative, postoperative and follow-up care.

Methods: A mixed-methods evaluation was conducted using semi-structured interviews ($n = 38$), health care provider ($n = 28$) and patient surveys ($n = 47$), and 2 years of clinic data on new patients. Data from a double operating room experiment detailed expected versus actual times for 3 phases of surgery (pre, during, post).

Results: Preoperatively, the PA prioritizes patient referrals for surgery and redirects patients to alternative care. In the second year with the PA in place, there was an increase in total new patients seen (113%). Postoperatively, the PA attended rounds on 5 surgeons' patients and handled follow-up care activities. Health care providers and patients reported that the PA provided excellent care. Findings from the operating room showed that the preparation time was greater than expected (38.6%), whereas the surgeon time (20.6%) and postsurgery time (37.2%) was less than expected.

Conclusion: After 24 months the PA has become a valuable member of the health care team and works across the continuum of orthopedic care. The PA delivers quality care and improves system efficiencies.

Contexte : Le manque de ressources et les inefficacités des services d'orthopédie au Canada créent des possibilités pour de nouveaux modèles de dotation et de mise à contribution des ressources existantes. Aux États-Unis, les adjoints au médecin sont des fournisseurs de soins courants dans les services spécialisés d'orthopédie comparativement au Canada qui en fait une utilisation limitée. Dans le cadre d'un grand projet de démonstration, Alberta Health Services (AHS) a créé un poste d'adjoint au médecin dans un programme de chirurgie des membres supérieurs en Alberta, au Canada, afin de démontrer le rôle de l'adjoint au médecin à 4 étapes des soins : préopératoire, opératoire, postopératoire et suivi.

Méthodes : Une évaluation avec méthodes mixtes a été effectuée au moyen d'entrevues semi-structurées ($n = 38$), de sondages auprès de fournisseurs de soins ($n = 28$) et de patients ($n = 47$), et de données des nouveaux patients de la clinique sur 2 ans. Les données d'une expérience en salle d'opération double indiquaient le temps prévu et le temps réel de 3 étapes des chirurgies (pré, per et postopératoire).

Résultats : À l'étape préopératoire, l'adjoint au médecin a établi la priorité des patients référés en chirurgie et redirigé les patients vers d'autres soins. Lors de la deuxième année de l'adjoint au médecin, nous avons observé une augmentation du nombre de nouveaux patients accueillis (113 %). À l'étape postopératoire, l'adjoint au médecin a participé aux tournées auprès des patients de 5 chirurgiens et s'est occupé des activités liées aux soins de suivi. Les fournisseurs de soins et les patients ont signalé l'excellence des soins de l'adjoint au médecin. Les résultats de la salle d'opération ont révélé un temps de préparation plus élevé que prévu (38,6 %), alors que le temps de chirurgie (20,6 %) et le temps postchirurgical (37,2 %) étaient inférieurs aux prévisions.

Conclusion : Après 24 mois, l'adjoint au médecin est devenu un membre valorisé de l'équipe de soins qui travaille à toutes les étapes du continuum des soins orthopédiques. L'adjoint au médecin fournit des soins de qualité et améliore l'efficacité du système.

Orthopedic services are often burdened with shortages in resources and system inefficiencies owing to the high volume of patients who may or may not need surgery.¹ Long wait lists for consultation, delays in precise diagnosis and management, and increasing numbers of outpatients can impact the continuum of care.² One way to deal with wait times and increase access to orthopedic services is to use the workforce more efficiently. This can be done by modifying existing practice patterns and/or using alternative interprofessional staffing models.³ The use of physician assistants (PAs) is an opportunity to look at alternative providers, which could benefit orthopedic surgery. Physician assistants have worked in surgical roles since the 1970s in the United States.⁴ In the United States, orthopedics is the third most common specialty area practised by PAs, with 25% of PAs practising in a surgical subspecialty capacity.⁴ In Canada, PAs have been introduced in several provinces, but have not been steadily employed across the country.

In 2012, Alberta Health Services (AHS) initiated the Physician Assistant Demonstration Project, where 12 PAs were introduced into various health care settings to determine where best to deploy the role. This study examines the role of 1 PA in a subspecialized upper-extremity surgical program at a peripheral hospital. The program sees inpatients and outpatients and provides care for trauma and degenerative conditions of the shoulder, elbow, wrist and hand. Surgical assistants (SAs) and surgical extenders (SEs) have worked with the program. Surgical assistant shortages are perceived, but the role attends only to operative duties; SEs were used for postsurgical and evening on-call care, but that role no longer exists. The PA role is an opportunity to improve services and fill provider gaps in 4 areas: screening of patients preoperatively, assisting in operating room (OR) care, aiding in the aftercare of surgery, and attending to postdischarge follow-up care. The objectives of this study were to describe the role of the PA in the upper-extremity surgical program; describe the role of the PA in an OR study; and show the impact of the PA role on patients, providers and the system.

METHODS

We used data from 2 sources: data from the formal evaluation of the PA demonstration project, and data from an OR experiment conducted with the orthopedics group.

Evaluation of the PA demonstration project

We used a mixed-methods approach for the evaluation.⁵ Data involved semistructured interviews and surveys collected over 24 months of PA position implementation. For this program, we interviewed surgeons, the PA and other health care providers at 4 times using semistructured interview guides. Questions focused on the PA role, supervision and mentorship responsibilities, PA integra-

tion into the team, development of the PA role over time and impact of the PA role on patient care and services. Interviewers obtained consent to audio-record interviews, which lasted 10–40 minutes and were conducted over the telephone. Interviewers took notes and analyzed data based on the guide and emergent information.

We asked health care providers and patients to complete surveys about their perceptions and experiences with the PA. The health care provider (28-items) and the patient (13-item) surveys involved 5-point Likert-type responses. An overall item with a 10-point response option asked patients to rate the quality of care received from the PA. Open-ended questions allowed all respondents to elaborate on the benefits, challenges, or suggested improvements of the role. Data from the outpatient clinic (e.g., number of new patients) were used as part of the evaluation. Descriptive statistics were used to calculate survey and clinic data.

Data from the OR experiment

The PA participated with 1 of the orthopedic surgeons in a double room experiment (e.g., 2 concurrently run ORs) to maximize the number of surgeries in a day and reduce the surgeon's time spent outside of the surgical procedures (e.g., preparation and postsurgical time) during the first year of the program (2014). Data were collected for expected (estimated) and actual (observed) preparation time, surgical time and postsurgical time in minutes. Preparation time included getting the room (set-up) and patients (positioning) ready for surgery. Surgeon time referred to the time the surgeon was in the OR, including completion of the safe surgical checklists and surgical procedures. The postsurgery time included closing the patients' incisions, recovering the patients and moving the patients out of the OR. The same orthopedic surgeon attended to patients scheduled in 2 ORs on the same day for routine surgeries, including carpal tunnel surgery, isolated acromioclavicular resection and bankart lesion/glenoid labrum repair for shoulder dislocation. Surgeries were selected that would not account for more than 50% of the time the patient was in the OR.

The same orthopedic surgeon attended to 8 patients scheduled in 2 operating rooms for routine surgeries. The surgical team in room 1 consisted of 1 orthopedic surgeon, 1 anesthesiologist, 2 registered nurses (RNs), 1 respiratory therapist, 0.5 RN floater and 1 physician SA. The surgical team in room 2 consisted of 1 orthopedic surgeon, 1 anesthesiologist, 1 RN, 2 respiratory therapists, 0.5 RN floater and 1 PA. The PA was able to assist the surgical team to increase the surgeon's capacity. The AHS quality improvement department forwarded data from the double room experiment. The PA demonstration project was an AHS quality improvement project and underwent a second opinion ethics review to meet ethical standards.

RESULTS

Over 24 months, evaluators conducted a total of 38 interviews with surgeons and health care providers and collected surveys from 28 health care providers and 47 patients in the upper-extremity surgical program.

Results are structured into the 4 areas of care where the PA works: preoperative, OR, postoperative and follow-up care. Preoperative care entails the PA consulting with patients in the clinic before the decision to have surgery. Operative care entails the PA attending to details of care in the OR (e.g., room set-up, patient positioning, surgical activities). Postoperative and follow-up care consist of the PA caring for patients on the inpatient units after surgery and following up with outpatients in the clinic.

Preoperative care

The PA works with the primary supervising surgeon in the clinic for approximately 1 day out of the work week. The PA conducts a substantial amount of screening; history taking; physical exams; interpreting diagnostic imaging; discussing treatment options, including the risks involved with surgical procedures and/or rehabilitation; booking ORs; and teaching. The PA triages patient consultations, resulting in expedited treatment for those with urgent needs through reduced wait times from referral to consultation. Prior to the establishment of the PA position, the surgeon prioritized patients in batches, which could lead to delays. The PA conducts most activities without direct supervision; however, the surgeon confirms patients' treatment options and examinations completed

by the PA. Patients are generally assigned to the PA for more routine activities, but may also be assigned based on the surgeon's time (e.g., busy with another patient).

Data compiled on the number of total new consults for preoperative patients seen in the clinic of the supervising surgeon with the assistance of the PA are shown in Table 1 and Table 2. The PA began work in January, 2014. Table 1 shows a 6-month comparison of total new patients seen before and after PA position implementation. On average, a 30% increase in the number of patients seen was noticed in the first year. Table 2 shows a 6-month comparison of total new patients seen from the first and second year after PA position implementation. On average, a 113% increase was noticed as the PA became more proficient.

Operating room

For approximately 2 days a week the PA takes the role of an SA in the OR, which is 50% of his overall time. The PA may also be asked to assist with on-call surgeries during his regularly scheduled shift. The PA's integration into the OR went well, as providers understand the role. Interviewees discussed the need for additional OR help because there is a lack of SAs. The SA role was said to be "essential to the unit"; thus unit staff appreciate that the PA is a consistent person in the OR who knows each surgeon's way of operating. This is noteworthy because the "surgeons are extremely picky about the setup of the rooms." In general, the PA attends to shoulder injuries (e.g., instability and hardware irritation) and other upper-extremity issues, such as carpal tunnel, and humerus bone and acromioclavicular joint issues. Throughout the project, the PA has been able to acquire skills in a graduated manner through training from the supervising surgeon, who is skilled in surgical education. For example, the PA no longer needs direct supervision when closing a skin incision; however, supervision occurs while the PA fixes ligament repairs. The surgeon decides when the PA's skill level has advanced. Most direct supervision occurs with complicated procedures. The PA's skills improved over time, and it is now common that he "preps and closes with patients in OR."

Double room experiment

The intent of the double room experiment was to maximize the surgeon's capacity with the assistance of other providers. The surgeon was available only during the surgeon time and was absent for the pre- and postsurgery times. Table 3 depicts the findings of the expected versus actual preparation, surgical and postsurgical times. The findings show that the actual preparation time was 38.6% greater than expected, the actual surgeon time was 20.6% less than expected and the actual postsurgery time was 37.2% less than expected. The 8 surgeries were expected to take 604 minutes, but took 498 minutes in total; thus, 2 hours

Table 1. Six-month comparison of total new patients seen at baseline and during PA role implementation

Month	2013	2014	Percent change
July	42	58	38%
August	19	9	-53%
September	18	67	272%
October	61	33	-46%
November	48	78	63%
December	37	47	27%
Total	225	292	30%

Table 2. Six-month comparison of total new patients seen during PA role implementation

Month	2014	2015	Percent change
January	42	70	67%
February	53	124	134%
March	33	77	133%
April	53	57	8%
May	24	101	321%
June	48	110	129%
Total	253	539	113%

were saved. Doubling the number of surgeries in a day also allowed the surgeon to attend to outpatients on a day that would have typically been scheduled for surgical patients.

Postoperative care

The PA takes on some duties of the SA and SE roles within the hospital. For example, the SA only assists in surgery; the role does not take on administrative tasks (e.g., postoperative orders) or attend to patients postoperatively. Health care providers initially viewed the PA role as similar to the SA role, but they anticipated the PA would eventually function beyond an SA role by taking on duties of the SE role (e.g., attending to inpatients' needs). The SE would attend rounds on patients after hours and attend to issues with vital signs or pain control, write histories, or obtain consent from patients. Unit staff said the SE role was missed because the SE had been available after hours.

The PA sees approximately 60%–70% (or 6–15) of all inpatients postoperatively, which frees up the surgeons for complex patients and administrative work. The PA addresses issues by attending rounds on patients for 5 surgeons twice per day (morning and late afternoon). This reduces calls to surgeons and fills the gap of the SE role to some extent. The PA also attends to in-hospital consultations, which improves the consultation process; writes up paperwork for transfer orders; makes care arrangements; and coordinates and organizes surgical patients in a timely manner.

The PA is restricted from giving verbal and written orders to other health care providers without cosignature and verification from a supervising physician. This inhibits full integration with postoperative surgical units. However, the PA acts as a liaison between the surgeons and unit staff; communication is fairly fluid between the PA and other providers, considering the role restriction (e.g., unable to discharge patients). Staff will contact the PA first with any patient concerns. The PA will assess the situation and consult the appropriate surgeon if unable to make recommendations or treat patients independently.

Follow-up outpatient care

One day a week the PA treats patients in the outpatient clinic; patients either are in need of postoperative follow-up care or care as a new consult through the orthopedic consult line. Postoperatively, patients may access follow-up care multiple times within the year after surgery. Consult patients include those who do not need surgery, but need conservative management for conditions such as fractures or lacerations. Follow-up appointments are booked with both the PA and surgeon, which increases the number of new consults that can be seen. The surgeon is now able to see new consults much more easily than before the PA's participation. The surgeon and PA are able to provide better care, and more time is spent per patient, as clinic flow is improved.

Survey results

Provider survey

Table 4 shows that the majority of item means were 4.00 and above, suggesting that providers “agree” or “strongly agree” that the PA is a collaborative member of the team. Items with means below 3.00 were negatively worded.

Open-ended comments from providers were positive. One provider commented that it “makes the team more efficient when you have a consistent surgical assistant.” Another commented that the PA was good for helping the nursing team with changeovers, understanding the needs of the surgeon and helping them with it, and decreasing the pressure of nurses.

Patient survey

The average age of patients who completed the survey was 52 years, and 53% were men. Table 5 shows that all patients positively responded to the PA role, with all responses being “strongly agree.” In addition, patients rated the care they received from the PA on a scale from 0 to 10, with 10 being the best care possible; patients rated the care as the best or nearly the best, with an overall

Table 3. 2014 expected versus actual times in minutes for pre, during and post-orthopedic surgery

Procedure	PTE	APT	% Deviation	STE	AST	% Deviation	PSTE	APST	% Deviation
Carpal tunnel	11	12	9.1%	21	8	-61.9%	28	9	-67.9%
Isolated AC resection	9	14	55.6%	31	14	-54.8%	32	23	-28.1%
Bankhart/glenoid	14	12	-14.3%	36	38	5.6%	32	25	-21.9%
Bankhart/glenoid	14	22	57.1%	36	32	-11.1%	30	22	-26.7%
Bankhart/glenoid	14	14	0.0%	36	32	-11.1%	32	29	-9.4%
Bankhart/glenoid	14	25	78.6%	36	31	-13.9%	32	18	-43.8%
Bankhart/glenoid	14	18	28.6%	36	37	2.8%	32	19	-40.6%
Carpal tunnel	11	23	109.1%	21	9	-57.1%	32	12	-62.5%
Totals	101	140	38.6%	253	201	-20.6%	250	157	-37.2%

AC = acromioclavicular; APT = actual preparation time; APST = actual postsurgery time; AST = actual surgeon time; PTE = preparation time expected; PSTE = postsurgery time expected; STE = surgeon time expected.

mean of 9.65. Open-ended comments from patients were generally positive, with many appreciating the extra time the PA spends with them. One patient commented:

The PA is a great addition to the health care system. He was able to answer a lot of my questions and further explain the doctor's diagnosis. He was also a sounding board for the doctor and together discussed the problem and care in front of me and gave me further information.

Another patient commented:

As the doctor is usually busy, it is essential to have the visitation from the PA. The attention to detail and the effort to address concern and questions was quite evident. He helped to afford a level of comfort with the issues, and the preparations helped to make the time spent with the doctor more effective. A very valuable role, and I feel an essential function. [The PA] was excellent.

Table 4. Mean ratings on health care provider survey

Item	Mean
1 I have a good understanding of the PA role.	4.03
2 I have a good understanding of which patients are suitable for management by the PA.	4.00
3 The PA has the knowledge to provide appropriate care to the assigned patient group.	4.28
4 The PA has the skills to provide appropriate care to the assigned patient group.	4.11
5 The PA is an integral part of the team.	4.46
6 The PA draws on the expertise of other members of the team.	4.53
7 There is a great deal of joint planning for patients on our team.	4.07
8 The PA treats patients with courtesy and respect.	4.75
9 The PA listens carefully to patients.	4.71
10 The PA explains things in ways patients can understand.	4.60
11 The PA follows up with patients' questions and comments.	4.62
12 The PA follows standard processes that affect patient safety.	4.46
13 The PA always reviews patient records before treating a patient.	4.39
14 The PA always updates patient charts/documents after seeing a patient.	4.25
15 The PA contributes to the flow of information to patients and families.	4.42
16 The PA contributes to patient rounds.	4.14
17 The PA never conducts activities that he hasn't been trained to do.	4.18
18 The PA is available to staff throughout the day to assess patients.	4.21
19 The PA always notifies a physician when a patient's condition is abnormal.	4.48
20 The PA works cooperatively with members of the team.	4.82
21 The PA has improved access to care.	4.40
22 The PA has reduced patients' time spent waiting for a provider.	4.00
23 The PA contributes to my job satisfaction.	4.10
24 The PA contributes to stress in my role.	2.50
25 The PA is readily available to provide service to patients.	4.03
26 I trust the PA's decisions.	4.32
27 I have concerns with the PA with respect to team functioning.	1.71
28 I can discuss challenging issues with care team members on this unit.	4.03
PA = physician assistant.	

Table 5. Mean ratings on patient survey

Item	Mean
1 The PA introduced himself as a PA.	4.80
2 The PA explained the role to me.	4.76
3 The PA treated me with courtesy and respect.	4.89
4 The PA listened to my concerns.	4.93
5 The PA took the time to explain my condition in a manner that I could understand.	4.91
6 The PA took time to follow up on my questions and comments.	4.87
7 The PA explained what was going to be performed.	4.84
8 The PA is informed of my plan of care.	4.82
9 The PA was comfortable speaking with me.	4.91
10 The PA is a valuable member of the care team.	4.87
11 The PA's knowledge has contributed to the quality of my care.	4.82
12 The PA has contributed skills to the quality of my care.	4.82
PA = physician assistant.	

DISCUSSION

Preoperative clinic

The PA is very helpful in the preoperative clinic with prioritizing patient referrals for surgery and redirecting patients to alternative care. Wait times for consultation with the surgeon decreased,⁶ and access increased with the total of new patients seen with the help of the PA. Focusing the PA's time for referral and office consultation helps to improve patient access to orthopedic services.⁷ Literature suggests that elective surgeries are often given low prioritization or urgency; however, the patient's symptom severity may not justify low urgency for surgical care.⁸ Physical, psychological and social consequences of delayed elective surgeries have been well documented, including exacerbation of the disorder, emotional distress, altered relationships and loss of work.^{9,10} Thus, waiting for elective surgery may involve a prolonged period of suffering from symptoms.⁸ A partial solution to this problem is prioritizing patients on waiting lists to reduce the overall burden of delay, which can be accomplished by the PA taking on the patient referral prioritization process.

Several studies have suggested that the majority of patients seeing orthopedic surgeons do not actually receive surgery.^{11,12} This means that surgeons spend a considerable amount of time providing expertise for diagnosis and management of musculoskeletal injuries, arthritis and other conditions,¹³ which could be reduced with the help of the PAs. Because the PAs understand presurgical expectations, disease processes, treatment algorithms, surgical procedures and techniques, and rehabilitative expectations and protocols, consistent communication of information from the orthopedic team is relayed to patients.¹⁴ Often the PA has more time to answer questions and concerns than the surgeon.

Operating room

The OR is the most resource-intensive unit in the hospital, where targeted clinical efficiencies are warranted.¹⁵ Physician assistants can improve orthopedic surgical care in the OR for patients by attending to patient positioning, draping and wound closure.¹⁶ In this study, the PA in the double room experiment helped to maximize the surgeon's capacity. The surgeon did not attend to the preparation time (patient positioning, room set-up) and spent less time operating and dealing with postoperative care (closing incision, room cleaning, and set-up for the next patient). The time saved in surgery could be partially explained by selecting the most stable patients for the experiment. However, reducing the surgeon's transitions from routine to effortful tasks may have reduced drifting or automatic thinking that occurs during the more routine

parts of surgery (e.g., prepping and closing). This allowed the surgeon to use focused and purposeful attention and effort during surgeries,¹⁷ which may have decreased the surgical times. Because surgeries were conducted concurrently, the surgeon was able to leave during the postsurgical time to start surgery on the next patient, while the PA closed the first patient and cleaned up the room. This reduced the surgeon's postsurgical time. Overall, the duties of the PA role in the OR reduced recorded surgical times, allowing for maximum patient throughput. By allowing the PA to take on certain OR duties and assist with procedures, the surgeon saved 2 hours of time, or 15 minutes per patient. If surgeons could double the amount of surgeries per day, maximum patient throughput could be obtained. Similarly, in a Canadian arthroplasty program, the surgeon saved approximately 50 minutes per patient or 815 hours of surgeon time per year.¹⁶ Furthermore, PAs can reduce costs by freeing up SAs (who are typically family physicians) to attend to primary care patients.

Canadian orthopedic surgeons spend one-third of their time operating,^{18,19} thus they are not used to their full capacity. Access to the OR for surgical care is the main limiting resource for orthopedic services. The double OR set-up is not commonly practised in Canada owing to the availability of resources and OR time.¹⁶ In the event that OR time can be increased, using an additional OR, rearranging existing resources, and/or using PAs as SAs can substantially increase surgical volumes and decrease wait times.¹⁶ Otherwise, efficiencies outside the OR can be found, as other health care providers could support two-thirds of the surgeons' time spent outside of the OR.^{17,18}

Postoperative care

Physician assistants can assist with postsurgical care by attending to orders, notes, daily rounds, discharge summaries and prescriptions.¹⁶ Since the SE role no longer exists on units, the PA is a valuable resource for unit staff. However, the PA was restricted from reaching full potential on inpatient units; the PA was unable to take the SE duties, such as discharging patients, attending to patients after hours and writing independent orders. The Council of the College of Physicians and Surgeons of Alberta grants PAs the ability to work under a regulated professional as an unregulated provider.²⁰ As such, physicians and PAs can negotiate the level of autonomy in clinical decision-making and prescribing of certain medications that the supervising physician would normally prescribe. In Canada, there is a lack of regulation for PAs, restricting their ability to work to their full potential.

Outpatient follow-up care

The PA is a consistent provider along the care pathway who assists with questions or concerns from preoperative, operative, postoperative and follow-up care; this

improves patient satisfaction.²¹ Patients reported excellent care from the PA, mainly owing to the extra care and attention they received from the PA. Although the PA has a limited role in follow-up outpatient care, the role could be used more in this area. Although outpatient clinic appointments are made in advance,²² surgeons often are delayed, which can hold up the patient schedule. This may decrease patient satisfaction and strain staff. The PA could be used in this area to improve scheduling of certain types of patients and fill in when the surgeon is behind schedule. The PA could attend to repeat patients returning for review of their progress with limited direction from the surgeon.

CONCLUSION

The PA role was successfully implemented along the care pathway for the upper-extremity orthopedics program after 24 months. Surgeons, health care providers and patients were all pleased with the quality of care offered by the PA, making the PA a valuable addition to the health care team. The PA was able to take on duties in all aspects of care to fill workforce shortages at the hospital and improve system efficiencies. There remain areas where the PA role could expand after 24 months, such as taking on more focused and complicated procedures, increasing responsibilities in postoperative and follow-up care (e.g., prescribing authority and discharge orders), and improving efficiencies in the system (e.g., assisting more surgeons). Research on workload analysis would offer a more comprehensive understanding of how to optimize roles.

This study was part of a larger project on using PAs in Alberta, Canada. Additional PAs could assist this group or others; however, Alberta does not have a steady supply of PAs to be employed in the health care system. Provincially, offering relocation allowance, guaranteed terms for those willing to move to Alberta, and clear payment and reporting structures for PAs could improve recruitment and ongoing management and funding of the role. Alternatively, a PA education program could be developed in Alberta to increase the number of trained PAs.

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