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THE DIFFERENCES BETWEEN CANADIAN ARMED FORCES AND CIVILIAN PHYSICIAN ASSISTANTS: AN INTERVIEW SERIES

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ABSTRACT

The number of Physician Assistants (PA) in Canadian healthcare will grow as the population increases and ages. The closure of the Canadian Armed Forces Physician Assistant Education Program will increase the direct entry of civilian-educated PAs into military service. Knowing the factors related to military or civilian education and practice is essential in understanding this human resource. Information for this qualitative study was gathered through structured interviews to develop and explore the themes occurring during the Canadian Armed Forces Physician Assistant's journey through their career, education deployment, and transition to civilian employment. Civilian PAs joining the military must understand that the military is a controlled environment that requires flexibility and adaptability, but a high level of comradery is among the benefits. Role differences were noted in military and civilian practice and explored the experiences, practice environments, teamwork, resiliency, flexibility, limited range of patient ages, and medical conditions limited clinical experiences. The transitions into civilian practice by military PAs resulted in a steep learning curve related to the health concerns more common to civilian populations. Still, they were backed by the confidence and attributes those individuals developed in the military. Regarding work environments, the military requires and offers unique experiences and posting to remote locations, naval ships, and overseas, which can result in autonomous practice only found in specific rural civilian areas.

Introduction

The need for more Physician Assistants in the Canadian healthcare system is growing and knowing this profession's history, evolution, and sector differences is essential to understanding this human resource.

The Canadian Association of Physician Assistants (CAPA) reports 218, or 31% of their 854 PA members, are from the Canadian Armed Forces (CAF). (1) The number of active-duty PAs is between 100-140, and the CAF graduated 723 Physician Assistants (PA) between 1980 – 2019. (2) The Canadian Armed Forces Physician Assistant (CAF-PA) program entry and utilization differs from civilian counterparts. The University of Manitoba (UofM) and McMaster University PA

education programs were established in 2008. The University of Toronto's (UofT) Consortium for PA Education began in 2010, and all three are considered civilian institutions. (3). The Canadian Armed Forces Physician Assistant Education Program dates from the 1980s. It occurred at the Canadian Forces Health Services Training Centre in Bordon, Ontario, a federal institution, and part of the Department of National Defence. (4)

The potential for graduate PAs from the civilian programs to enlist has increased as Direct Entry into the service as a PA is now possible. Identifying and understanding the significant similarities and, more importantly, the variability between these two Physician Assistant subsets is essential.

This qualitative study demonstrates the differences in academic backgrounds, training, and characteristics between CAF Physician Assistants and their civilian counterparts. Only a few articles exist with information on 'Physician Assistants in the Canadian Forces' (5) and 'The birth of physician assistants in Canada' (6) but any published comparisons and details are only outlined for the process in the USA. With the assistance of interviews between multiple CAF-turned-civilian PAs currently in practice in Canada, these questions and concerns will be explored with those with first-hand experience.

CAF-PAs are posted across Canada and serve worldwide to integrate into all levels of operation. Civilian PAs, despite their introduction in Manitoba in 2003, appear to still be in their introductory phase as only four of the ten provinces have a PA history before 2010. (3) Although, the professional association's newsletter in March of 2023 announced that three additional provinces will introduce PAs in the near future. (1) The military and civilian education models are proven and nationally accredited. Still, from an outside perspective, one does not know the differences and successful characteristics required for each role (civilian vs. military). This is a problem for Canadian healthcare and warrants further investigation.

The proposed objectives of this study are to understand the role difference between civilian and military PAs, the differences in academic background and training, as well as comprehensively understand the challenges and advantages of CAF PA training for follow-on employment in civilian practice. Additionally, this research seeks to understand some of the key factors required in the transition of a PA's focus from a military context of "Force Health Protection", which is defined by NATO as: "all medical efforts to promote or conserve physical and mental well-being, reduce or eliminate the incidence and impact of disease, injury, and death and enhance operational readiness and combat effectiveness of the forces" (7), to addressing the needs found in the larger civilian community.

Methods

This qualitative study investigates the interviewed physician assistants' roles, employment atmosphere, and education. Through a series of recorded in-person and virtual interviews, a standardized list of questions guided the conversation (Appendix A). The responses were used to identify essential and recurring themes. The subject population of ex-military PAs currently employed in provincial healthcare environments is small. The number of targeted interviews planned was ten, however, seven PAs were able to participate in the available time frame. The study was approved by the Health Research Ethics Board at the Bannatyne Campus Research Ethics Office of the University of Manitoba (HS25701).

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Individuals were contacted via email by the Principal Investigator. Participants who agreed to participate have consented, and their identities are kept confidential to only the author. Those interviewed hold varying experiences in both civilian and PA roles allowing for a wide range of experience in both sectors to be shared. Participants included former military PAs currently in urologic surgery, general surgery, primary care, orthopedic trauma surgery, emergency, community health, and rural medicine in Alberta, Manitoba, and Ontario. Interviews were conducted on a volunteer basis with no financial incentive. The data analysis process involved transcribing the individual recorded interviews. Each transcribed interview was then analyzed by the primary investigator and mentor to mitigate interviewer bias. This was completed following the principles and properties of a humanities approach, where common themes were selected based on identifying keywords and repeated phrases in the quotations of the interviewed subjects. Identifying information (name and email) and collected data is secured on an encrypted spreadsheet of a password-protected cloud drive. No real names are used in this paper, and those interviewed are assigned the code names MMA, MMB, MMC, etc. All data is encrypted and stored for one-year post-publication before deletion.

Entry Points for PA Education in Canada

The entry point for individuals to become Physician Assistant Students (PA-S) in Canada varies between the CAF-PA and civilian university programs. Within the CAF, healthcare professionals progressed through the enlisted member ranks before selection to the CAF-PA program. After completing the required basic training qualification, members begin a 34-week military occupational specialty qualification level (QL) course called QL3, a medical technician apprenticeship course. The role and duties of a Medical Technician in the CAF are comparable to a Paramedic (Basic Life Support) or Licensed Practical Nurse on the civilian side. (8)

After five to six years, the now QL3 medical technicians embarked on a 17-week QL5 journeyman course. This course encompassed advanced emergency care training and works to build on previous training, experiences, and classes. Historically, with 10-12 years of service in the CAF, QL5 Journeymen can advance to a QL6A medical technician by attending a 12-week course that adds components of administration and leadership, in addition to medicine. Between 12 and 16 years after enrolment into the CAF, a few medical technicians were selected for the PA program. (4) The seven CAF-PAs interviewed for this study held the rank of sergeant with an average of 16.57 years in the military as a Medical Technician. The shortest duration as a medical technician before transitioning to PA was 11 years, and the longest was 19 years.

The 3 civilian schools in Canada all have similar requirements for application and therefore, acceptance. The UofM is a graduate-level master's program, which requires applicants to hold a 4-year bachelor's degree. Specific prerequisites exist, such as biochemistry, human anatomy, physiology, and successful completion of the CASPer situational judgment test. (9) The University of Toronto (UofT) has a slightly different entrance requirement. Completion of a bachelor's degree is not required; instead, 4 semesters of university-level education with clinical experience is needed. The degrees offered by UofT and McMaster University are bachelor's degrees (BSc-PA). The notable difference lies with UofT entrance requirements of health care experience, a minimum of 100 hours during the COVID pandemic, which will soon be increased to 350 hours. (10) McMasters PA program applicants need at least 2 years of undergraduate education, without specific course requirements or health care experience. (11) However, the

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majority of those accepted to the UofT and McMaster PA programs have completed undergraduate degrees or better and have clinical experiences in first responder roles or higher. (12)

Given the variations in entry requirements for civilian PA schools, it is evident that many who enter the civilian stream have significantly different healthcare experiences and training. For example, the MPAS class of 2023 comprised individuals with an average age of 28. The cohort of 15 held at least one bachelor's degree, with some also having a master's degree. The class consisted of occupational therapists, paramedics, nurses, and research assistants. The few with no prior professional healthcare experience generally held other graduate degrees. McMasters' class of 2023 has an average age of 24, with 62.96% of the class holding bachelor's degrees with an additional 18.52% holding a master's degree (subtotal of 81.48%). Just 18.52% had a minimum of 2 years of classes at the university level with previous careers, including nursing, firefighter first responder, pharmacy assistant, kinesiologist, and a few without any previous healthcare experience. The U of T class of 2023 demographics showed an average age of 27, with 75% of successful applicants having a bachelor's degree and 19% with a master's degree (subtotal 94%). Previous careers included paramedics, military medics, kinesiologists, pharmacy assistants, midwives, and nurses. (12)

Education

The military PA formal education that occurred at Canadian Forces Base Borden, in Ontario, ran from 1984-2021 and was the first formal PA program introduced in Canada. Yet, the structure of PA programs in Canada has evolved. While PA was not the first term used in Canada, a similar role began in the Canadian Navy in 1911. (4) The CAF has been training and deploying these specialists since the 1960s. (4) The progression, adaption, and improvement of these early medical assets resulted in the construction of the medical technician trade. These medical technicians' versatility and ability laid the foundations for the PA profession. In 1984, the CAF graduated the first formal PA class from the Canadian Forces Medical Services School in Borden, Ontario. (4) (Various titles for the training site have included Canadian Forces Health Services Training Centre and Canadian Forces Medical Services School). It wasn't until 2004, after 2 decades of clinical service, that the CAF-PA program was formally accredited by the Canadian Medical Association (CMA). Initially, a diploma program, graduates from 2009 and onwards received a university-level degree through the University of Nebraska. (3)

The last CAF-PA program design consisted of 4 phases: 48 weeks of didactic education and a year of clinical rotations in 13 medical and surgical subspecialties, including sites tailored to military needs, such as dental and public health. After successfully completing the first 2 phases, members commence the 3rd phase with exams at the Canadian Forces Health Services Training Center. Phase 4 involves preparing for the Physician Assistant Certification Council of Canada (PACCC) examination and posting to their new units. (4)

In 2017, the CAF altered its rank structure for PAs. Upon completion of the 4 phases, candidates are promoted. Before 2017, promotion was to the rank of Warrant Officer and given the job title of "PA". Historically, this role was occupied by senior non-commissioned members (NCMs), which means they are not commissioned by the Queen/King. These roles were occupied by those who are considered trade specialists with extensive hands-on experience and skills. (4) These individuals held medical responsibilities, leadership, and administrative tasks, with the tendency to divert time away from the clinic. The transition to an officer rank (commissioned

member) resulted in the former non-commissioned PAs promotion to Captain and assigned positions allowing a focus on clinical practice. (4)

Physician Assistant education within the civilian sector has similarities and differences between the three current Canadian Universities and the CAF PA education programs. Manitoba regulated PAs in 1999 with the first PAs starting practice in 2003 and in Ontario in 2007 being either American or CAF PA program graduates. (6) In contrast, the Canadian civilian PA education programs started with the first classes at the UofM and McMaster in 2008 (graduating in 2010), and UofT in 2010, graduating in 2012. (6)

The Univ. of Manitoba's Master of Physician Assistant Program (MPAS) involves 25 months of didactic coursework and clinical rotations. The clinical year is 46 weeks and involves a 6-week clinical course in emergency medicine, 8 weeks in primary care, 6 weeks in surgery, 4 weeks in community health, 4 weeks in psychiatry, 6 weeks in internal medicine, 4 weeks in obstetrics and gynecology, 4 weeks in pediatrics and two 2-week electives. In addition, MPAS students must complete a research-based capstone project. (9) UofT is a 2-year program with most of the didactic year dispensed online through distance education. Students within this BScPA program attend residency skills blocks during the didactic for clinical skills. The UofT's second year has a 3-month rotation in primary care with 4-week rotations in general surgery, emergency medicine, hospitalist/internal medicine, mental health, and pediatrics. (10) The U of T program lends 12 weeks to electives. (10) McMaster University is a 24-month program with a slightly different approach to the didactic year. The first 12 months of the program consist of problem-based learning, in which students are placed into small groups to master the curriculum. (11) The second year is spent on clinical placements that include family medicine, pediatrics, geriatrics, internal medicine, surgery, emergency medicine, and psychiatry. (11) Where the programs may have different curriculums and entry points, all Canadian PAs must meet defined national competency standards before challenging PACCC National Exam. (13)

Post Graduation

Life after graduation from a civilian or military PA program is where dramatic differences prevail. The location where recent graduates practice medicine and the population demographics being treated has a serious impact on acquiring experience. The patients or clients in the military are approximately 80% male individuals, aged 18-55, and typically healthy. Before joining the military, a 2-part medical screening ensures a standardized health and fitness level before enrolment. Those with significant or chronic medical conditions would not be eligible.
Upon promotion and completion of the national certification exam, military members are posted to any location within Canada or overseas. The postings within Canada are to the air force, army, or naval bases, with the possibility of deployments, such as navy ships or overseas deployment with an army unit. There are unique opportunities to complete 'advanced training' in three main subspecialties, aviation medicine, basic dive, and then advanced dive medicine. The workload at each posting varies significantly with a mixture of administrative duties, field exercises, a remote duty deployment, specialty dive medicine, or "duties as required." As stated in more than one interview: "Depending on where you practice, you don't actually practice."

Life after graduation for MMD varied from her colleagues: *"Right out of PA school I specialized and was posted right to the navy, so all of my medicine was focused on naval*

military medicine and diving medicine". Demonstrating each posting within Canada can be completely different.

The interviews show that the military PA role is compared to that of primary care with components of occupational health. Due to the patient demographics, there appeared to be an overwhelming response regarding common presenting illnesses. Military PAs mainly deal with acute complaints, specifically of muscle skeletal (MSK) or viral illness nature. When asked, "what would you say was the most common presenting illness while you worked as a military PA?" all seven of the interviewees included MSK in their response, and 5/7 included viral illness/respiratory infections in their response. However, the CAF education and assigned duties often include anticipating the risks of traumatic injuries from training or deployment.

As mentioned by MMB; *"I would say [the military] is probably a good mix of family medicine and emergency. Family medicine prevails when in Canada in clinics; it's a lot of walk-in clinics in the morning and then we do appointments for follow-ups for chronic conditions and medicals. When we deploy, it's anywhere from emergency medicine to trauma medicine as well as looking after the daily complaints of a walk-in clinic, family medicine style."*

Aside from medicine, there is much more to consider as a military PA and aspects of the job that a civilian PA will likely not encounter. For example, maintaining fitness standards, French language ability, and extra-curricular accomplishments are integral to the career and can affect the progression and subsequent promotion. Duty assignments can involve organizing, leading, teaching others, and working as a clinician while essentially 'on call' full-time, depending on the nature of the mission. It was noted that there is an inherent sense of both teamwork and accomplishment that comes with operational deployments.

In contrast, civilian PAs work with many vulnerable populations and care for patients from birth to end-of-natural life spans. Civilian graduates work in many sectors of interest when a position is available. Job opportunities in various specialties are available in Manitoba, Alberta, and Ontario. Nova Scotia and New Brunswick PA roles are currently limited as opportunities slowly develop. Therefore, the work hours and other job expectations can be negotiated within the contract and are case specific. In general, most civilian PAs work Monday-Friday with set daily hours, with the addition of on-call shifts, depending on the specialty.

Recently, civilian graduate PAs have had the opportunity to join the CAF as Direct Entry Officers (DEO). In this situation, civilian-trained PAs complete a 12-week Basic Military Officer Qualification training (BMOQ). This course covers the essentials of military life, principles of leadership, weapon handling, field training, navigation, and fitness. Once completed, further healthcare-specific training is provided. PAs complete the Common Health Services Officer online learning modules to understand policies, management, and procedures in the CAF. Direct Entry Officer PAs finish indoctrinating at the Canadian Forces Health Services Training Centre in Borden, Ontario where they learn the nuances of military medicine.

Comparing Working Environments

Other notable differences between military and civilian PAs in the environment they work in. Within the military, there are postings to naval ships (HMCS), OUTCAN postings (overseas), isolated postings, and garrison/base postings to any CAF location in Canada. The current OUTCAN postings for PAs include Geilenkirchen Germany and Casteau Belgium. Isolated Canadian postings include Yellowknife NT and Goosebay NL. The average posting length is 3 years but can be very dependent on the needs of the unit or clinic. In addition to postings, there are various deployments and exercises that military PAs can be subject to at a moment's notice and for a varying amount of time, as experienced by MMC;

> *"You can be stuck in an office one day and then three days later you are in the north pole. You need to be adaptable; you need to be able to be okay working with minimal resources and definitely need to know when to say when. You need to know when to ask for help and when to ask for help early".* The theme of autonomy and having confidence in your ability prevails in these circumstances as *"often you are left to yourself way up north or at sea and there is no one around, maybe a telephone away. You have to be comfortable making a diagnosis for sure."* (MMG).

In discussing the transition of civilian-trained PAs into military life, MMX depicts an important aspect of the military working environment:

> *"You are totally on your own. I don't think any of the civilian PAs get that concept because I don't think they expect to go to Wainwright on exercise and set up a tent and you're it. You're the top dog, there's no backup there's nobody around. [You are] very autonomous right off the bat, which is a huge change from the civilian practice right now.*"

While there are many unique experiences and locations for CAF military PAs, there are some similarities to civilian PA work in Manitoba and the rest of Canada. Manitoba provides many opportunities for rural and remote practice. Ongomiizwin Health Services (OHS) works to serve rural fly-in communities. Currently, PA positions within this organization travel to locations such as Garden Hill and St. Theresa Point in which PAs provide care to isolated indigenous populations. Given the physician shortage that currently exists, remote towns within Manitoba may only have a PA as their primary care provider. Prior to transitioning to emergency medicine in Winnipeg, MMC worked in McGregor MB for 3 years acting as the "town doctor" while their supervising physician was in Portage La Prairie, a town roughly 40km away. They would communicate in person only 1-2 times per month. MMD who works in rural practice in Alberta is not only involved in primary care but is responsible for managing patients in the setting of an outpatient clinic, emergency room and long-term care.

> (MMD) "*I am also responsible for the acute care patients that are hospitalized so I round on our patients every day. And any issues that pop up because we also have long-term care beds, so I also take care of any acute issues that pop up.*"

Results and Themes of the Interviews with Military-Educated PAs

In keeping with the study objectives and using the above sections "Entry Points for PA Education in Canada", "Education", "After Graduation" and "Comparing Working Environments", there were four main questions posed which will be discussed in the following section.

A common theme of the military PAs path is experience. The approach to becoming a military-trained PA is more structured and reproducible, as evident by the many years of training required to be selected for the CAF-PA program. The seven CAF-PAs interviewed did not hold a bachelor's degree or formal education before the commencement of their PA program. However, they did have an average of 16.57 years of clinical exposure, leading to confidence, maturity, and extensive practical knowledge. The military path has added components aside from medicine, including leadership training. This is another benefit to ensuring that CAF-PAs can excel in emergencies and are comfortable practicing autonomously.

> *"The military gives you lots of leadership training which helps you develop your confidence in approaching issues and communicating where you are lacking knowledge"* (MMD).

The lengthy linear path allows for a gradual acquisition of knowledge along with various operational experiences and results in practicing PAs with high confidence. Depending on the individual, these advantages may also be viewed as disadvantages. Operational deployments and additional administrative and leadership duties tend to remove the PA from full-time clinical practice. (4)

Those who start in a civilian PA program vary significantly as they enter this field. A younger entry point results in PAs starting their career much younger. Civilian-graduated PAs often have a bachelor's or graduate degree, placing them in the 23-28 age range when starting their first PA classes. This is an advantage for the Canadian healthcare system and is an attraction for many who embark on the civilian PA path. An early start means more opportunities to learn and bring knowledge along in their career, as applied experience is a great teacher (14). As civilians, niche specialties such as obstetrics, pediatrics, and geriatrics are much more of a common practice, but PA generalist knowledge transfer across specialties. There is more of a focus on the general Canadian population, including vulnerable people, resulting in graduates maintaining those competencies easier.

Civilian PAs have the opportunity to work in whichever specialty/role they prefer and that they feel will be the most impactful. A quote from MMD summarizes this discussion point well:

> *Put two PAs five5 years down the road and they are probably at the same juncture in their careers. Immediately post-grad I think civilian PAs have a better medical sense, but the military PAs are more ready to do independent duty."*

Role Differences Between a Physician Assistant in Military and Civilian Environments

PAs practice medicine under the authority of a supervising physician. For clarification, the scope of practice describes the services a qualified health professional is deemed competent to perform and permitted to undertake, in keeping with the terms of their professional license. There are minimal differences between military and civilian PAs' scope of practice and should be described as a role difference. As alluded to in previous sections, military PAs tend to work in

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primary care settings under the authority of the Canadian Armed Forces Surgeon General. (4) Due to the different environments and operations of military PAs, their role tends to be more autonomous, with supervising or supporting physicians being accessed and consulted via telecommunications systems such as a phone or radio. While there are some exceptions and exposure that come with different deployments, the general theme seen is a practice focused on acute care. Military PAs are, for the most part, dealing with individuals aged 18-55 with minimal health issues.

The role of civilian PAs depends on their place of employment, negotiated autonomy with their supervisor, and provincial regulations. Regardless, both sets of PAs must maintain professional competencies and work within their Provincial medical act and regulatory structure.

Transition to Clinical Practice in the Civilian Setting

The issues and successes experienced by graduates of the Canadian Armed Forces Physician Assistant education program on employment in civilian practice vary by individual and practice setting. More common issues experienced and expressed by the CAF-PA graduates included a vertically inclined learning curve in demographic-related ailments. This is not due to a lack of exposure from their PA education or training but related to the population being treated. Given the everyday need for a military PA, the expertise and experience in specific fields such as obstetrics, geriatric health, and pediatrics is less. CAF-PAs acquire the same didactic education and knowledge in these areas as civilian-trained PAs; still, with the military population, this knowledge may not be used or fully maintained. This discussion point is summarized clearly by MMD:

> "*I would say that the majority of military PAs are well prepared to handle acute traumatic issues. For the most part, we handled emergencies incredibly well, which has been the consistency I have seen. In terms of chronic health conditions, pediatric patients, gyne, obstetrics, and geriatrics, we are woefully underprepared because we rarely treat that demographic except in extreme circumstances*."

Regarding successes, specific attributes of confidence, autonomy, and resiliency developed in the CAF assisted in their transition to civilian practice. A recurring theme discussed throughout this study is that experience is an asset. From experience comes leadership, *"I feel like our leadership training in the military prepares us well for transition into civilian practice because even though we may lack the medical skills, we have the confidence to approach [the situation] and confidence in approaching patients."* (MMD). The phrase '*use it or lose it*' was a commonly expressed opinion in the interviews and appropriate for both PA subsets.

The Flip Side; Civilian-Educated PAs joining the Military.

Given the cessation of the CAF-PA program in 2021, some civilian-trained PAs will inevitably enter the military. The seven interviewees provided advice and details of the transition for those interested. The consensus for success in the military is to understand the regimented environment of the services. Flexibility, resiliency, and adaptability are essential attributes to possess or learn. As noted by MMF:

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> "*I was told when I graduated to PA that I had the option to choose first pick for posting because I ranked high, so I requested Victoria, Quebec, and NB, and they said no, your options are Edmonton, Calgary or Petawawa*." As depicted, logistical considerations always come with a military career.

As stated previously, working in the military is not just clinical practice. An officer in the military is a leader and teacher. The individuals' flexibility and adaptability traits come into play.

> "*There are expectations that you will be leading and directing others. Nine times out of ten you are going to be looking after junior medics and helping them with their medical education*" (MMD). *"There is no expectation while you are in the military that you're going to do the same job every day. [You have to be] willing to do the work even when undesirable". "Individuals need to accept that deployments are often a requirement.*" (MMD)

> The advice shared from MMA and MME: "*Civilian PAs must understand the highly autonomous role that occurs quickly in the Military. With that comes confidence in yourself and your abilities".*

> Furthermore, *"Many positive factors come from joining the Military."* There was an overwhelming response to the sense of community by ex-military PAs working in civilian practice. "*You are going into a brand-new family. You will have friends for life*" (MMB). For MMF, "*being a PA in civilian practice is your career or job but being a PA in the military is like a lifestyle, so there is so much more connection to what you are doing*."

While deployments and the unknown can be challenging for some, they provide opportunities worldwide that a civilian PA may never have the chance to experience.

Conclusion

This study sought to develop an understanding of the military and civilian PA profession in Canada, including key differences and similarities. The value of Physician Assistants (PA) has been proven for decades in the Canadian Armed Forces (CAF). The interview data suggest that CAF-PA education program graduates succeed in civilian practice due to a unique combination of experience and formal education. The differences between the two populations are evident in the entry points and academic backgrounds. Upon review of all four education programs in Canada (UofM, UofT, McMaster, CAF-PA), they all have minor variations. However, the structure, content, and lengths are similar. The PA is educated as a generalist but develops knowledge of their specialty with time. The most significant difference discovered was in the life after graduation component. Specifically, the PAs role in their chosen work environment is job specific and ends when the civilian goes home. The Military PAs bring their role home as the military is considered family. The clinical variation found is in the situations or environment care is provided, and the patient population seen is varied and unique. *Canadian Armed Forces Health Protection* is comparable to specialty practices like Pediatrics or Orthopedics. A PA's medical knowledge develops as they serve their patients to meet that population's unique needs. The stated benefits of

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joining the military include the development of skills such as resiliency and a new community. The advancement of autonomy in a short time can help build the confidence and skills of the PA much quicker. While there are added benefits one might not encounter in the civilian world, there are many other duties and factors to consider outside of medicine. One must be flexible and understand the 'military life.'

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"HOW WILL YOU BE PART OF THE TEAM?" LESSONS FROM THE FIRST PAS ON A UK HOSPITAL SERVICE"

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ABSTRACT

The Physician Associate (PA) profession is relatively new to the British National Health Service. PAs have been educated in the United Kingdom since the mid-2000s, but only recently have universities begun training large numbers of PAs. More than 70% of all UK PAs work in hospitals, but there is little published literature about the experiences of these PAs. This brief report is a sub-study of a larger grounded theory study on the barriers and facilitators to the integration of PAs into the NHS. PAs who had been the first PAs on a secondary care service in the NHS were recruited. The PAs in this study were asked what advice they would share with those who are initiating the PA role on a specific hospital service. PAs advised their colleagues to 1) Be able to explain the Physician associate role succinctly and clearly, 2) Manage expectations for the PA role, and 3) Be honest and trustworthy. Know the limits of your knowledge and training, 4) Take initiative in all areas of your professional life, 5) Be a good team member, 6) Be patient and have perseverance, and 7) Get involved to solve administrative issues. As a qualitative study, this study has limited generalizability, but the themes raised by these PAs may help newly graduated PAs achieve a successful transition. These data may also guide PA educators around the world as they prepare their students to enter hospital practice.

Introduction

The Physician Associate (PA) profession started in the United Kingdom (UK) in the mid-2000s with a pilot project of American PAs brought to practice in the British National Health Service (NHS). Universities began educating PAs in 2008 and they are now working in the NHS in both primary and secondary care. At the beginning of 2019, there were less than 1000 PAs in

the United Kingdom (UK). (1) However by October 2020, nearly 1800 PAs worked in the NHS, with 70% working in hospitals across a wide variety of specialties. (2) Little research has explored the experiences of the first PAs on hospital services in the UK. The experiences of these early PAs can inform new PA graduates and PA educators around the world.

Methods

This brief report is a sub-study of a larger study on the barriers and facilitators to the integration of the first UK-trained PAs into a hospital service in the British NHS. The larger study employed a grounded theory qualitative approach using semi-structured interviews to collect data. Human subjects approval was obtained from both the George Washington University Intuitional Review Board and the St. George's, University of London Research Ethics Committee. PAs who had worked for fewer than 5 years on their service, were graduates of UK PA programs and had been the first PAs to be hired onto their clinical service were recruited. Emails were sent by the universities which had graduated PAs at the time of study initiation to their alumni to recruit participants. Social media posts were also used to recruit people. All PAs in this study were working in England. At the time of this study, there were only a handful of PAs in Wales and Northern Ireland. While there were more PAs in Scotland, repeated attempts to recruit them failed.

Nine PAs entered the study, three from surgical teams and six from medical teams. Interviews were recorded and professionally transcribed. All PAs were asked: "If you had the opportunity to advise a recently graduated student who will be the first PA in [your specialty] at a hospital, what would you say?" This manuscript includes the responses of PAs to this question. Transcripts were coded independently by both authors to improve the trustworthiness of the analysis. Standard qualitative research steps to ensure trustworthiness such as triangulation, piloting of the semi-structured interview, debriefing sessions for coders, and negative case analysis were employed. We continued to interview participants until thematic saturation had been reached. The larger grounded theory study developed a larger theoretical framework which will be reported in other papers.

Results:

Coding and analysis of the data revealed seven different themes, each identified by multiple participants are presented in Table 1.

Table 1 – Advice to PAs who will Inaugurate the PA Role at or in a Hospital Setting: Themes and Subthemes

Themes	Subthemes
Be able to explain "What is a Physician Associate?"	• Hone your speech by practicing it regularly • Do not get frustrated – you will need to explain the role repeatedly as staff on your ward turn over.

Manage expectations for the PA role	• Set your own expectations for the PA role and try to get others to see the role as you do • Try to assess the expectations of other people so that you understand their approach to you • Communicate your vision of what a PA could do for the team
Be honest and trustworthy. Know the limits of your knowledge and training.	• Patient safety is the highest priority • Doctors trust PAs who express their limits more than those who try to hide their limits
Take initiative in all areas of your professional life. Do not wait to be instructed.	Take initiative to : • Improve your medical knowledge • Improve your procedural skills • Gain health systems knowledge • Seek out formal and informal teaching • Teach others • Advocate for yourself and the profession
Be a good team member	• Be enthusiastic, hard-working and humble • Be willing to do tasks that help the team, even if they are not of great interest to you
Be patient and have perseverance as you initiate the role	• First positions are seldom what they are expected it to be • Roles and expectations evolve
Get involved to solve administrative issues. If you do not involve yourself, the resolution may be unpalatable to you.	Administrative problems often arise in: • Human resources (evaluations, job description) • Information Technology (permissions to place orders, access to records) • Interactions with other departments

These PAs advised their future colleagues to:

1. Be able to explain: "What is a Physician Associate?" Several PAs reported that they had been educated by their PA programs on how to answer the question "what is a PA?". They were grateful for this training as they found themselves repeatedly having to explain the role as other staff came and went.

> Med PA 53 – *When I started, because we were the first PAs there, it was about finding our place on the team. And there were lots of questions [from doctors and nurses] "What do you do?" "What can't you do?" "How are you going to be part of the team?" It was just communication, communication, communication. Explaining our role.*

2. Manage expectations for the PA role. That other health professionals do not have a clear idea of the role is unsurprising in a country that had <1000 PAs at the time of the study. Most of the PAs in this study indicated that they had been taught in PA school about the existing and potential roles for the PA. Once they started work, they had to try to set these expectations on their teams to obtain an appropriate PA role.

> Surg PA 17 - *With the education that we've had from [our program] we sort of knew how to let people know, "We're not here to do the filing and we're not here to do the paperwork. We're here to contribute to the healthcare role."*

3. Be honest and trustworthy. Know the limits of your knowledge and training. For new PAs to be useful members of the team, they need to recognize that their training is less in-depth than that of doctors. Because the education of the PA is condensed, patient safety rests on the ability of the PA to recognize what she does not know and to seek help from someone more senior. One PA discussed how she built trust with the doctors on her team by having a low threshold for consultation.

> Med PA 85 – *Being ultra-cautious from the beginning of your career results in [the doctors] trusting you. That's eventually rewarded by, if you do have a worry about patients and you flag up your concerns, then they will absolutely take it seriously. It is so important as a PA to know your limits.*

4. Take initiative in all areas of your professional life. While some PAs expected their new role to be framed by those who had hired them, most of the PAs realized that the responsibility to develop as a PA and to further the role would fall on them. They advised other new PAs to take the initiative to develop further medical and health systems knowledge, to seek formal educational opportunities, to advocate for themselves and the profession, and ultimately learn to teach others.

> Med PA 53 – *In the first six months you try to settle into the department, try to get to know how the department runs, and try to establish rapport with the medical team.*

> Surg PA 17 - *For example [Invasive Procedure], on the PA course we weren't really trained how to do that. When we got into the role we said, "It's [Specialty], in a day we could have four of these. For one doctor that's a lot. If you teach me how to do this, that's you doing two and that's me doing two."*

> Med PA 96 – *For the last year or so, I have one afternoon per week when I do bedside teaching for the third-year medical students allocated to our department. I think they're quite grateful for anyone who is willing to put some time in with them.*

5. Be a good team member. Most PAs reported that they had facilitated acceptance onto the team by treating others with respect and working hard. They advised new PAs to be willing to do tasks others dislike, learn from everyone and be humble.

> Med PA 74 – *Be keen and enthusiastic. Be humble, ask questions. Show that you are interested on the ward rounds. Be keen on doing procedures. Be willing to have difficult conversations with patients and families. Get feedback. Be confident, but not over-confident.*

6. Be patient and have perseverance as you initiate the role. Nearly all PAs in this study expressed that their first position was not what they expected it to be. They realized quickly that it would likely take time for their role to mature. One PA explained this well:

> Med PA 31 – *It might take time for people to understand what you are doing. But if you're mindful of others and explain to people what your role involves and the benefits, people will see for themselves… how great it can be for the department. With a bit of patience, a bit of perseverance, and hopefully it will evolve into what you want it to be.*

7. Get involved to solve administrative issues. Nearly all PAs were frustrated at the inability of the hospital systems to provide basic infrastructure for PAs. They lacked appropriate job descriptions, annual evaluation forms, and IT access to do their work. PAs found that they needed to advocate for themselves or the resolution to the problems proposed by others may not be satisfactory.

> Med PA 42 – *It is really basic stuff, like the computer system in the hospital didn't recognize the PA role. That's why I ended up joining the PA board because it's like "you're one of the biggest employers of PAs in the country and you can't sort out your IT to have us recognized on the system?"*

> Med PA 53 – *My advice is to never go to [your supervisor] with problems; go with solutions.*

Discussion:

In this study of British-educated PAs working as the first PA on a hospital service, participants advised their future colleagues on how to integrate themselves effectively onto the clinical team. They advised these PAs to be able to clearly explain the PA role, to manage expectations for the role from the start, and to be honest about the scope of their medical knowledge. They also advised new PAs to take the initiative to improve their knowledge and skills, to work well on the team, be proactive about administrative problems, and to be patient while others gain understanding of the role. These findings are somewhat consistent with a very limited literature on the relationships between PAs and doctors in the United Kingdom. Two previous studies have found that a majority doctors who worked with PAs believed PAs had sufficient medical knowledge to carry out their duties and that the PAs were valued for their strong interpersonal skills and ability to free junior doctors to attend educational activities.(3),(4)

These findings are helpful not only for UK PAs who are inaugurating the role in a hospital setting, but for PA educators around the world. Especially when preparing students to work in places in which the PA role is less well understood, educators should formally teach their students about the scope of the PA role, how to present the role to others, how to set expectations for the PA role, and how to resolve interpersonal and systems issues they may face. The need for explicit education around the PA role is part of the impetus for educational accreditation standards that require inclusion of PAs, who can model the PA role, on the faculty of PA programs. These findings also suggest that the processes for choosing students to enroll in a PA program should include some assessment of character traits such as honesty, commitment, reflectiveness, resilience and determination. An assessment of communications skills is also essential. Many PAs in this study pointed to the importance of strong communication skills to help them work well as a member of a team and manage misconceptions about the PA role.

This study has several limitations. A qualitative study with a small number of participants and an inductive reasoning approach is, by definition, not generalizable. In qualitative research, we consider whether the findings are "transferable" or useful to others. The findings from this study may allow us to conduct research that is more generalizable in the future. Confirmation bias is also a risk in qualitative research, despite the inclusion of standard techniques for ensuring trustworthiness in a qualitative study. Finally, all the participants in this study were volunteers. It is possible that the factors that made them all willing to volunteer also influenced their responses to the interview questions.

Conclusion

A small qualitative study of PAs who had pioneered the physician associate role at British hospitals provides some guidance to establishing the role in a hospital. These PAs advise those who initiate the role on a new service to be able to explain the role to others, work to set expectations for the role, be a good teammate, always be honest, put the patients' welfare first, and take initiative to expand the clinical role and solve administrative difficulties. These suggestions also can guide educators in their preparation of students to initiate and expand the PA role.

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Exploring Physician Assistant Entrustable Professional Activities, Integration, and Role Satisfaction Within Academic Hospitals in Hamilton, Ontario, Canada.

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ABSTRACT

Physician Assistants (PAs) have been integrated across academic teaching hospitals in Hamilton since 2010. To explore PA role integration and PA satisfaction in working at an academic hospital, a survey was administered to practicing PAs at Hamilton Health Sciences Centre (HHSC) or St. Joseph's Healthcare (SJH). The 22 PA respondents reported a considerable amount of autonomy of 76% (with 100% being full autonomy). The PAs felt their respective training programs prepared them for the workforce. It is evident that PAs integrate well into the healthcare system; many are involved in mentoring medical students, and all have excellent relationships with their supervising physician(s) and co-workers. However, many PAs expressed feelings of burnout, lack of compensation, and paucity of PA mentorship. Areas of improvement include increasing PA mentorship, recruiting more PAs, and integrating more specialized clinical experience into PA programs.

Introduction

Physician assistants (PAs) are trained healthcare professionals who are certified to practice medicine under the guidance of a physician[1]. Common specialties PAs work in include family medicine, internal medicine, emergency medicine, dermatology, nephrology, orthopedic surgery, neurology, infectious diseases, and geriatrics.[2] Similar to physicians, PAs are educated under the medical model[1]. Although the scope of practice of a PA varies with specialty, core duties include diagnosing, treating, and providing patient-centered care[1]. In Canada, there are approximately 700 PAs, of which over half work in Ontario.[3] The Canadian Association of Physician Assistants (CAPA) is a national organization that supports PA integration and promotes professional advocacy efforts.[4] The Physician Assistant Certification Council of Canada (PACCC) ensures that the standards of the profession are met and maintained through delivery of the national certification

exam and maintenance of certification status.[4] PAs are currently regulated in New Brunswick, Nova Scotia, Alberta, and Manitoba, and regulation is currently underway in Ontario.[2]

Recently, there has been a large surge in the demand for healthcare needs and a shortage of healthcare workers across North America.[5] This demand increased after the COVID-19 pandemic since the rate of physician burnout tripled in 2021 compared to previous years.[5,6] Increasing the number of PAs helps offset physician burnout and shortages by extending physician services. PAs are in demand due to increased wait times, and recognized need to boost support in underserved communities (i.e, care of the elderly, mental health, etc.).[7] International literature suggests that PAs can increase continuity of care, efficiency, workflow, increase patient satisfaction, improve access to care, and decrease length of hospital stays.[7-9] PAs also extend physician services: PAs perform 70-96% of the physician's duties and are involved in 40% of patient encounters every year.[7,8] Extending physician services can include conducting patient histories, reading and interpreting tests, and prescribing.[8] PAs can also increase patient satisfaction, decrease length of stay, and provide good quality, safe patient care .[7,10]

Although role definitions are similar across jurisdictions, each country has its own definition of role competencies and entrustable activities. In Canada, entrustable professional activities for PAs (EPA-PA) were defined and published in 2021 and are summarized in Table 1. PA EPAs provide an overarching summary of CanMEDS-PA competencies and highlight the twelve professional activities that can be entrusted to a PA as they transition into clinical work from a PA education program. [11,12] Given the value and breadth of practice, it is also important to understand the impact PAs have in academic teaching hospitals. With increased interest in using PAs to cover resident gaps and fill health human resource needs, academic teaching hospitals have become consistent employers of PAs. Academic teaching hospitals are already committed to providing medical education and training to future and current health professionals, but given the diversity of learners, understanding where the PA role fits is imperative to health human resource planning.

Given this existing landscape, the purpose of this study was to explore PA perceptions of entrustable professional activities, team integration, and role satisfaction across multiple specialties in academic teaching hospitals within Hamilton, Ontario, Canada.

Methods

Survey Design

To measure PA integration and common roles, an online-based survey was created and administered using Microsoft Forms. Since satisfaction analysis assessment is more interpersonal and opinionated, it is typically measured through surveys or interviews with questions geared towards assessing efficacy, professionalism, and knowledge.[13, 14] Within Healthcare delivery, team integration is a way of collaborating and communicating between professionals.[15] Integration can be measured by the process of how care is organized and managed by the provider through surveys.[16,17] These questions involve types of healthcare providers the participant directly works with, quality assurance, coordinated practice, and resourcefulness.[18]

Table 1 – Entrustable Professional Activities for Physician Assistants (2021)

EPA 1	Practices patient-focused, safe, ethical, professional, and culturally competent medical care across the healthcare continuum.
EPA 2	Obtains histories and performs physical examinations, demonstrating the clinical judgement appropriate to the clinical situation.
EPA 3	Formulates clinical questions and gathers required clinical evidence to advance patient care and communicates those results to the patient and medical team.
EPA 4	Formulates and prioritizes comprehensive differential diagnoses.
EPA 5	Develops and implements patient-centered, evidence-based treatment plans within the formalized physician, clinical team and caregiver relationship.
EPA 6	Accurately documents the clinical encounter incorporating the patient's goals, caregiver goals, decision-making, and reports into the clinical record.
EPA 7	Collaborates as a member of an inter-professional team in all aspects of patient care including transition of care responsibility.
EPA 8	Recognizes a patient requiring immediate care, providing the appropriate management and seeking help as needed.
EPA 9	Plans and performs procedures and therapies for the assessment and the medical management appropriate for general practice.
EPA 10	Engages and educates patients on procedures, disease management, health promotion, wellness, and preventive medicine.
EPA 11	Recognizes and advocates for the patient concerning cultural, community, and social needs in support of positive mental and physical wellness.
EPA 12	Integrates continuing professional and patient quality improvement, life-long learning, and scholarship.

A survey was chosen rather than an interview due to scheduling constraints and ease of data collection. Participants were recruited through the participating organization's PA email distribution list. The surveys took 10-30 minutes to complete and consisted of 30 questions. Survey questions captured demographic information, common roles, role satisfaction, and team integration. Role-related questions focused on educational preparation, perceived abilities, and the most relevant EPA-PAs. PA integration was gauged by questions about relationships with co-workers, perceived support, advocacy, challenges, and role overlap. Satisfaction-related questions inquired about their job satisfaction and areas for improvement.

Participants

The survey was administered to PAs working in the Hamilton Health Sciences Centre including Hamilton General, Juravinski Hospital, McMaster Children's Hospital, McMaster University Medical Centre, and St. Joseph's Healthcare Hamilton – Charlton campus. Participants were employed by the organization and represented diverse specialties.

Data Analysis

The results of the survey were tabulated in a password-protected Microsoft Excel document. The data analysis involved tabulating the data by comparing responses and synthesizing common themes for written responses.

Ethics

This research project has been reviewed and accepted by the Hamilton Integrated Research Ethics Board (HiREB Project #15282). Each participant in this study provided informed consent prior to completing the survey.

Results

Twenty-two PAs agreed to participate in the study (n=22), representing over half of the hospital-employed PAs in Hamilton. The average number of years in their current specialty was 5 years and specializations are captured in Table 2.

Table 2. Participant Demographics

Variable	Response
Number of PAs	22
Year of Graduate (PA Education Program)	1997-2021
Number of Years in Current Specialty	5.31 years (range of 1-22 years)
Number of Supervising Physicians	Range from 1-12
Medical Discipline	General surgery, respirology, chronic pain, family medicine, interventional radiology, gynecologic oncology, critical care, peri-operative care in cardiac surgery, pain medicine, internal medicine, hematology, pediatric neurosurgery
Range of Patient Encounters	7-35 patients per day depending on service/specialty; average patient encounter 30-60mins.
Introduction to PA Profession	Learned about the profession through family members, friends, or colleagues; received treatment from a PA; Google search; participated in information sessions

Perception of Training, Role Autonomy, and EPA-PAs

With regards to how well the PAs believed they were trained in PA school on a scale of 1 to 10 (1 being not prepared, 10 being fully prepared), the average rating was 7.19 out of 10. A few PAs (n=5) indicated that more specialized training would have allowed them to attain more experience across different specialties. Others indicated that lengthening the duration of the PA program to cover more clinical and administrative content would result in more robust preparation for the workforce. One participant stated:

> *"It's difficult only because [my discipline] is such a sub-specialty, the only thing that would have better prepared me would have been to do a rotation in [this specialty], however unfortunately due to scheduling with learners, it was not possible in my case".* [PA6].

PAs who attended PA school during the COVID-19 pandemic stated that the lockdown restrictions from clinical sites and movement to virtual rotations made them feel less prepared. Other themes that emerged from PA perception of training included the importance of PA mentorship, networking, and the need for more experience in interpreting clinical investigations.

In terms of PA autonomy, the average ranking for the level of autonomy was 7.71 out of 10 (1 being no autonomy, 10 being fully autonomous). However, one PA indicated they were fully autonomous and no one else rated their autonomy as less than 5. Fifty percent (n=11) of participants indicated that their autonomy is somewhat important to them and 41% (n=9) rated their autonomy as very important to them. The rest were neutral. 91% of PAs verified that they work under medical directives. One PA clarified that there is a higher degree of autonomy for "on-track patients", stating:

> "*...we do have a lot of autonomy. Especially in the context of our routine "on-track" patients - the PAs have a lot of freedom with our care decisions with these patients*" [PA7].

Participants were also asked to identify the top 5 activities they were most often entrusted within their respective roles. Participants identified EPA 1, EPA 2, EPA 5, EPA 7, and EPA 8 as their top EPAs (Figure 1). Many of these PAs noted that these tasks are done independently and reviewed by the supervising physician.

Non-Patient Related Roles

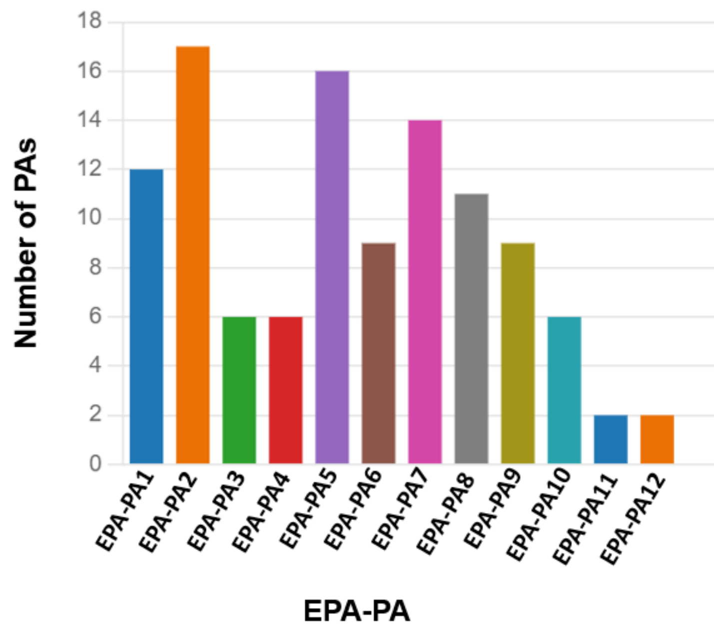
Several participants identified areas outside of direct patient care that they support from an organizational or administrative perspective (Table 3). Interestingly, the majority are involved in medical education through teaching/orienting/mentoring of medical learners (medical students, PA students, residents, etc.).

Table 3. Distribution of PAs Engaged in Other Non-patient Care Roles

Non-Patient Care Roles	% of PAs
Teaching/Orienting/Mentoring Medical students	73% (n=16)
Teaching/Orienting/Mentoring PA students	64% (n=14)

Teaching/Orienting/Mentoring residents	64% (n=14)
Other Administrative work (i.e., patient paperwork, drug applications, etc.)	55% (n=12)
Teaching/Orienting/Mentoring Fellows or Clinical Assistants	41% (n=9)
PA Scheduling (i.e., creating shift or vacation schedules)	36% (n=8)
Other hospital work (committee participation, union obligations, PA lead role, etc.)	27% (n=6)

Figure 1. Top EPAs Identified by Practicing PAs



Team Integration

With regards to team integration, most PAs have excellent relationships with their supervising physicians. Many indicated that they complete family meetings independently without the supervising physician and work under directives and are permitted to act without direct communication with the supervising physician:

> "*I work with many different supervising physicians. We have an excellent trusting relationship... I review with them on an as needed basis which would include questions that I have or co-signatures on medications that do not fall within my scope of practice*." [PA8].

Others indicated that due to the nature of the PA role, it was sometimes challenging to ask questions or make suggestions:

> "*We can sometimes have this mindset of not "wanting to rock the boat" or raising concerns about things, asking "why" we still do things the way we do. I've not fully unpacked where*

this comes from but sometimes, I think we "accommodate" more than we should on a whole host of things related to our practice." [PA12].

Potential overlap with PAs and other professionals such as residents, NPs, and fellows is summarized in Figure 2. One participant stated that:

"*The nurses don't do the physical exams or make decisions… the fellows are the closest match, and we honestly do work similarly. There has even been talk of having a fellow/PA clinic*" [PA6].

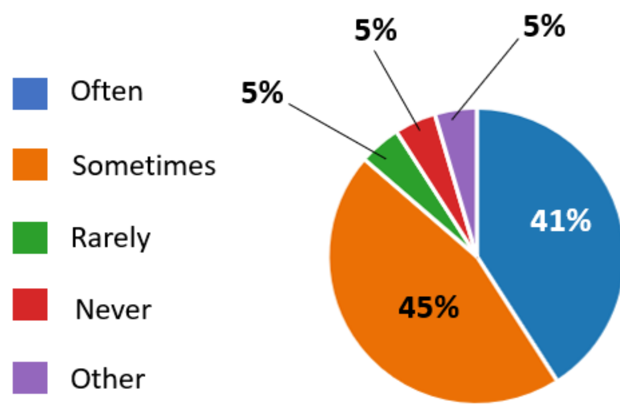


Figure 2. Amount of overlap PAs experience with other healthcare professionals.

Other PAs mentioned that PAs have a greater amount of flexibility and autonomy than their NP and resident counterparts. Unlike the residents, fellows, and physicians, PAs foster a multi-disciplinary/inter-professional approach to care and benefit from being more available to improve continuity of care. Several PAs mentioned that they round independently and often act as "… *a co-pilot for the supervising physician*" [PA19].

Role Satisfaction

Each participating PA (100%) indicated that they would recommend the PA profession to others and 95% of PAs stated that they would recommend their current specialty to others. 95% of PAs stated that they felt supported by their supervising physician, and 73% of PAs said that they felt supported by their department (Figure 3).

In terms of areas of improvement, some PAs (36%, n=8) indicated that they do not have an advocate or point person to address work-related issues:

"*Because I have a "split management" structure (i.e., I have a manager in Medical Affairs who is only cursorily involved if at all) I sometimes don't know what the best way is to address problems.*" [PA12].

Many PAs also indicated that they cannot prescribe certain controlled medications or prescribe at all using newly implemented electronic medical records systems. Almost half of the participants mentioned that compensation is not as high as it should be compared to their NP counterparts:

> "*The current funding model…requires that a fee-for-service encounter must include a meaningful encounter with the Physician. I am capable of seeing patients independently and developing plans independently, but this is not possible due to the funding model*." [PA2].

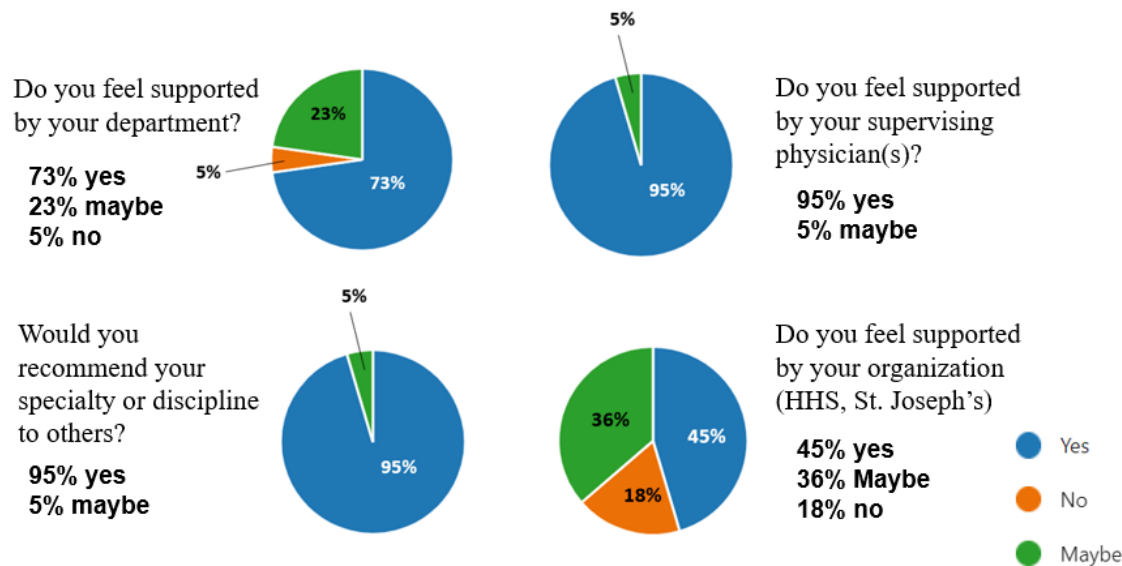


Figure 3: PA Feedback on Role Satisfaction (by question)

Multiple PAs also stressed the need for more PAs on the team, and increased vacation time in order to reduce burnout and enhance quality of care: "*I am the "glue" keeping the team afloat as we do not have enough staff…*" [PA22].

Another PA mentioned that:

> "*More support from the institution (the hospital) would be my number one request. We have so much support on the ground level from our supervising physicians and team on the unit - but when there are larger issues on an administrative level there are often challenges. I think the hospital still doesn't completely understand our role and generally creates more roadblocks than help. But this also true for many allied healthcare workers and by no means isolated to PAs…*" [PA7].

Benefits of Being a PA

The main theme expressed by participants involved working collaboratively with the healthcare team:

> "*Something that I feel my supervising physician did very well (likely above average) was develop a very succinct onboarding process. I spent time shadowing residents, physiotherapists, occupational therapists, social workers…etc. to fully understand the pathway my patients take and how each role is involved with their care. I feel this made me very well rounded and cognizant of the importance of each step in the patient experience and considerations that need to be made along the way*." [PA8].

Other responses reveal that maintaining independence in patient care and a wide scope of practice is one of the highlights of being a PA. Many PAs also appreciate the high level of trust, approachability, and reliability between themselves, their supervising physicians, and other members of the healthcare team:

> "*I love when the MDs ask my opinion about what I think….I love being able to help with the knowledge I've gained over the past years, while still being somewhat removed as the PA and not the primary decision maker. It's also really nice when I get used to seeing patients routinely and then their physician is away and they are booked into another physician's clinic, but they still have me as continuity of care*" [PA6].

Discussion

Integration and Satisfaction

In this study, we explored PA perceptions of their role, integration, and satisfaction when employed in an academic hospital. PAs enjoy the collaborative working relationship with supervising physicians and appreciate the ability to see patients independently. Academic hospital PAs appreciate the need for networking and to build in mentorship to ease the transition from education program graduate to clinical practice. The idea of mentorship is supported by other studies that suggest mentorship from others in the same field yields a higher level of performance for the mentee, but also benefits the mentor.[19] In addition to mentorship, academic hospital-employed PAs also benefit from an advocate or point person to address work-related issues.

Results indicate that PAs are very satisfied with the relationship with their supervising physician. This is echoed in other studies that indicate that the quality of the PA-supervising physician relationship is a direct indicator of PA career fulfillment, well-being, and autonomy.[20] In terms of role clarity, a PAs ability to differentiate their role/duties between NPs, residents, and fellows despite the role overlap illustrates the profession's ability to integrate well into team settings. Additionally, participants indicated their role in teaching, mentoring, or orienting medical learners, PA students, and residents. PA involvement in non-patient-related activities can directly improve resident education and resident (or medical learner) satisfaction is an important variable of interest in academic hospital settings.[21]

The PAs are well prepared for obtaining histories, performing physical examinations, and demonstrating clinical judgment as demonstrated in their ranking of entrustable professional

activities. These core activities and expected competencies are supported by international literature exploring role definitions and PA scope of practice.[22,23] The participating PAs indicated they are satisfied with their career choices which is again echoed by previous literature exploring PA role satisfaction.[13, 24] In terms of role frustrations or limitations, increasing the PA rate of pay/pay scale or changing fee structures for physician billings (to include PA care) could improve role integration vs inconsistent funding models that limit role optimization.[25] Role burnout is a concern amongst all health professionals and carrying high patient loads across a small number of PAs is a contributing factor, which ultimately can impact a patient's well-being.[26,27] Not surprisingly, PA burnout can lead to increased dissatisfaction, additional fatigue, and increased odds of leaving their job.[13]

Recommendations

To optimize PA role integration into academic hospitals, this study has captured several recommendations. At a PA education level, the inclusion of PA mentorship that helps transition a student from program to practice would be a helpful addition. As in any discipline, PAs working in subspecialty areas identified the benefit of additional specialized clinical training and programs should be encouraged to continue to support elective opportunities and to invite sub-specialists to present to students to promote role integration and enhanced skills training in all medical settings.

At an employer level, organizations are encouraged to create efficient and informative PA onboarding processes with opportunities to shadow existing PAs, meet other (non-MD) staff, and participate in interprofessional training. Onboarding should also include PA-validated information for other employees to understand the PA role (if new to the site, setting, or organization). Additional recommendations include having a clear, centralized point person that is aware of union obligations, resources, and training opportunities in addition to being available to advocate for work-related issues.

Limitations, Implications, and Future Steps

Study limitations include the small sample size of PAs working in Hamilton-based academic hospitals. However, the purpose of this study was to understand role definitions, integration, and satisfaction specific to this well-defined population in hopes that this would inform larger studies. Although limited in generalizability, findings from this study can be used to build more robust onboarding platforms for PAs, ensure PAs are represented on EMR/information technology committees, and other factors that support PA recruitment and retention. Creating a sustainable employment landscape is essential since the work of PAs is highly sought after to support the healthcare system.[28] The analysis of this research was limited to the data provided by

the number of participants and extensive statistical analyses or comparisons were not completed (i.e., breaking rankings or responses down by specialty). This study also provided an opportunity to connect with PAs in collaboration with the local PA education program (via McMaster University) and will provides a starting point for future studies such as exploring patient satisfaction and employer satisfaction relating to the PA role in academic hospital organizations.

Conclusion

Academic teaching hospital PAs reported a high degree of independence, job satisfaction, team integration, and collaborative relationships with supervising physicians. Findings from this study help contribute to the limited literature on PAs in Canada and provide a starting point for additional studies exploring the role of PAs in academic hospitals. In our current health human resource crisis, understanding the factors that enhance and detract from role optimization is key. This optimization not only benefits the physician assistants themselves but also leads to improved efficiencies, fosters a culture of collaborative care, and supports additional medical education opportunities.

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