

Standing up for paramedic practice

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This comment piece will deal with the challenges facing the safety and wellbeing of paramedics and emergency medical service (EMS) professionals in Canada. The article shall briefly touch upon the antecedents and social history of paramedic practice from historic to present times.

In this commentary, the author raises several challenges facing the profession in the 21st century. Fortunately, they are all 'fixable' challenges, provided that researchers, decision-makers and practitioners begin to work together to make the right investments and make things happen.

As a social scientist by training, it is apparent to the author that pre-hospital/disaster medicine has sometimes been a largely invisible discipline, one that no doubt has a corporate culture and customs that are quietly rooted in the uniformed services of the past.

On a positive note, innovations in paramedic curricula, technology and scholarship bode well for the advancement and professionalisation of emergency medical services as an important public safety discipline. Yet, despite increasing public recognition, particularly in the popular media, there are a number of nasty, if not persistent, challenges facing first receiver professionals in the 21st century.

There are three issues the author will tackle in this commentary: (i) rewards (that is, compensation and benefits have not kept pace with the technological requirements and skills sets required for today's paramedicine practice; (ii) there is a critical shortage of peer-reviewed applied research on occupational and health challenges facing EMS practitioners, and, (iii) there is an increasingly worrisome trend of violence and abuse perpetrated against those who keep the public safe, particularly in the arena of civil unrest and terrorist acts.

Paramedic practice, as we know it today, is evolving and growing into its own rightful domain in the 21st century. This is a shiny new discipline worthy of the moniker 'a public good', and, while challenges abound, the author prefers to remain optimistic and hope that we can fix the perplexing problems that hinder progress in pre-hospital and disaster medicine. Perhaps the author can improve upon Robert Browning who said it better than most, 'Ah, but a (wo-)man's reach should exceed his (her) grasp, or what's a Heaven for?' (Browning, 2012)

History has not been kind to the pre-hospital emergency medical services profession as we know it today. Born out of conflict on the military battlefields of Eurasia, possibly dating back to Roman times; and later to be institutionalised during the Crusades as the Knights Hospitallers (Order of St John of Jerusalem), it was the humble foot soldier who most likely emerged as the first paramedic field surgeon, followed no doubt by blacksmiths and barbers.

Early ambulance services are reported to have existed during the Black Plague in Europe as the diseased, and the deceased, were removed unobtrusively from domiciles and public places. By the Crimean War (1853–56) and later WWI (1914–1918), and if the author may be permitted editorial licence, while university-based academic medicine was still in its infancy during the lifetime of Sir William Osler, 1849–1919), soldiers, sailors and volunteer nursing sisters delivered and performed the 'heavy duty lifting' in emergency medicine.

Born on long-forgotten battlefields, pre-hospital emergency care and its alter ego in academic medicine, evolved largely as by-products of Europe's theatres of war.

The recovery and treatment of casualties was certainly the domain of uniformed services, largely non-commissioned officers. An exceptional case worthy of mention, occurred during the Crimean War. It was volunteer nursing sister, Florence Nightingale (1820–1910), who commented publicly on the appalling state of military field hospitals. Nightingale, the mother of public health as we know it today, chastised the British generals to get the horses out of the troop's drinking water. Thanks to her stunning 19th century report to the Royal Commission on the Health of the Army, one may argue that the good sister single-handedly won the war and advanced medical practice for the better.

It is generally accepted that the history of formal training for first receivers and first responders in Canada can be traced to the influence of British and later US military cultures and field hospitals. The adoption of horse-drawn and motorised patient transport and eventually evacuation by fixed wing aircraft and helicopter became a reality during military campaigns of the 20th century. The Korean and Vietnam wars effectively extended emergency medicine practice into the skies. Thanks to new technologies and tools, gradually 'paramedic' and emergency medical services (EMS) models of practice, including triage, found their way into civilian domains and onto the road network.

Following the first two Indo-China Wars (1946–1975), the disciplines of pre-hospital and paramedicine migrated rapidly into the civilian world and around the globe. Training increasingly focused on the acquisition of competency based skills in EMS, including rapid triage. Curricula and practice expanded to include provision of a variety of emergency medical interventions including, among others,

extrication, pediatric care, spinal/head injury, cardiac care, water rescue and vicarious trauma. Specialised paramedic services also developed in tandem with hospital departments specialising in key areas (cardiac or burn units, for example). In North America, a multitude of training programmes in public and private institutions evolved. The popular media, including reality television, were also instrumental in dramatising the lived experience and challenges facing EMS rescue squad personnel.

Today, in Canada, entry-level paramedic training programmes require secondary school credits. Advanced paramedic training can extend into complex, technical degree programmes offered by colleges, technical institutes and universities.

Somewhat surprisingly for the outside observer, the entry-level training age limits for paramedic emergency medical responders can still be as low as 17 years—the same as present day recruitment age limits for the Canadian military. Clearly, this is not a profession for the physically weak or faint of heart. Both civilian and military EMS professionals today encounter a myriad of challenges, not least of which is potential post-traumatic stress as a risk outcome of their work. So we need to ask ourselves some questions. What are the key challenges, risks and threats to this profession?

Have psychosocial research and applied social science kept pace with the technological advancements? In the past 50 years, EMS has, to a large extent, moved into the civilian domain. Are there sufficient resources, tools, occupational health legislation and enforcement to ensure that paramedic professionals are safe in their work?

In Canada, it is fair to say that professional registration and accreditation have kept pace with international trends and paramedicine has become a new academic discipline.

As in the UK, Australia and the US, our curricula have become more technical and complex as demands grow for more diploma-and degree- oriented programming. The profile of paramedics and EMS professionals appears to be changing and more than ever before we see applications from mature students and college graduates. In some cases we also see physicians enrolling for EMS certificate and diploma courses in emergency management.

Private training colleges and public post-secondary education programmes also provide rigorous certification under the scrutiny of medical associations for accreditation. The scholarship bar for advanced paramedic care programmes has also been raised and, in British Columbia, for example, qualified paramedics are eligible for entry into Applied B.Sc degree programmes such as bachelors of emergency and security management studies.

The Justice Institute of British Columbia (JIBC) (Canada) (JIBC, 2012), by way of an example, offers a fluid continuum of scholarship options such as certificate, diploma and degree programmes which have both portability and transferability into higher degree levels. These include:

(i) Primary care paramedic certificate (33 credits of full-time study).

(ii) Diploma in health sciences (EMS) (60 on-line part-time or full-time credits) including certification in (a) paediatric education for pre-hospital providers (PEPP); (b) neo-natal resuscitation programme or NPR; (c) airway intervention and management in emergencies or AIME.

(iii) Bachelors of emergency and security management studies (120 credits plus diploma in health sciences). This intensive degree programme focuses on emergency management, disaster planning and security.

Present day emphasis on formal academic scholarship and experiential learning blends theory with practice and represents a significant value-added benefit to the field-based training of earlier years. The technological aspects of emergency medicine have also evolved rapidly in the past two decades. Advanced paramedics and emergency physicians share many common denominators in their training ranging from CPR with high-fidelity mannequins to administering expanded drug therapy protocols, performing surgical airway procedures including surgical cricothyrotomy, needle thoracotomy, not to mention interpretation of X-rays, ultrasonography, electrocardiogram (ECG) interpretation, as well as wound suturing.

In many instances, Canada's paramedics and EMS professionals, particularly those serving in remote and isolated environments, are delegated to perform advanced medical and life-saving procedures. The reality is that Canada is essentially a country with too much geography. For those residing in many of Canada's rural and coastal communities, including remote communities without secondary or tertiary healthcare facilities, EMS professionals are relied upon to provide essential medical services with expert clinical skill. Given escalation of all-hazard and human-made emergencies, including risks linked to creeping environmental change (for example, forest fires, floods, zoonotic diseases), municipal, provincial and federal governments need to reconsider their investments in public safety education and training. We should be grateful that our existing cadre of EMS professionals are aptly trained but are they sufficiently compensated to handle the so-called 'wicked' problems arising from global warming and the attendant climate change?

With respect to EMS social organisation, the Paramedic Association of Canada (PAC) is a voluntary professional organisation with a mission to provide quality care and to advance the field of paramedicine. PAC serves as a national advocacy agency for its diverse and geographically distributed membership.

According to the PAC website:

'...[the] vision of the Paramedic Association of Canada is to have paramedicine recognised in primary health care.' (Paramedic Association of Canada, 2012).

This vision statement speaks volumes with respect to the need to give credit and to change the 'invisible' nature of the profession in Canada. With a solid membership of over 14 000 practitioners in Canada, members are organised into provincial chapters, city chapters

as well as the Canadian Armed forces.

Despite a large national constituency, paramedic services and regulations in Canada are fragmented and may vary from jurisdiction to jurisdiction.

In certain jurisdictions, EMS workers, unlike police, have not been deemed or considered to be an essential service, and, while firefighters and police may be eligible for 'danger pay', it is frequently the case that paramedics are not. In certain Canadian jurisdictions, paramedics belong to collective bargaining units including public employee unions that may group EMS personnel with other 'outside' workers, including refuse collection workers.

So why are paramedics a relatively invisible profession in Canada? As mentioned, in the absence of national guidelines, EMS services, training standards, and protocols of care may vary considerably. Pre-hospital and disaster medicine remains an emerging academic discipline in Canada and most training continues to be delivered at the technical school/college/ institute level and not by universities. Comparatively speaking, very little research funding trickles down from government to the college level. In recent years Canadian colleges have received only a minuscule amount of federal funding allocated from the TRI Council granting agencies (for example Natural Sciences and Engineering Council (NSERC), Social Sciences and Humanities Research Council (SSHRC) and the Canadian Institutes of Health Research (CIHR)). As such, there has not been any great impetus or capacity for researchers in the College sector to undertake peer reviewed research. The colleges simply aren't sufficiently resourced to address the critical issues facing paramedics, including post-traumatic stress disorder (PTSD) and other occupational risks and hazards.

Without good science, academic scholarship and peer-reviewed research, it is difficult to advance evidence-informed public policy, interventions and new curriculum programmes. In reviewing the state of EMS research, there seems to be an inordinate interest in issues related to monitoring response times and the mechanics of triaged calls. It is only recently that we have begun to see more interest and collaboration among universities and colleges to address the underlying psychosocial issues in paramedicine, especially from the stand point and lived experience of those serving on the front line. So in the author's view, the field of paramedicine is caught in a vicious circle. Because EMS professionals are largely trained at the college level, few possess the post-graduate academic pedigrees sufficient to participate in research as principal investigators, let alone attract TRI Council federal government funding for research—without the egg there is no chicken, and vice versa.

On the positive side, professional organisations and associations can provide excellent venues in support of EMS research. One of the author's favourite organisations that addresses the challenges facing paramedic practice is the psychosocial section of the World Association for Disaster and Emergency Medicine (WADEM). WADEM makes a concerted effort to address the psychological and physical health of first responders and first receivers. As an aside, and for the interest of our *JPP* readers, the next WADEM international event, the World Congress on Disaster and Emergency Medicine (WCDEM) will take place in Manchester, UK in May 2013. This will be an ideal venue to showcase EMS practice and research worldwide. It will also afford a unique 'development moment' for both practitioners and researchers to forge international alliances and to champion paramedicine as a new applied science.

One of the more striking attributes of paramedic practice is the commitment of its members to ethics and public service. While these values may be well known within the membership, the author believes the general public and the consumers of EMS may not be fully aware of the guiding altruistic principles. EMS call centres in the City of Toronto for example, receive 334 000 emergency calls per year and respond to 265 000 requests for assistance. In turn, more than 180 000 critical care patients are transported to hospitals each year, about 500 per day (Toronto emergency medical services, 2012). Yet, when Toronto paramedics rallied at City Hall in the face of a looming lockout/ strike in February 2012 that focused on the rights of EMS workers to be permitted to join the ranks of police and fire as essential services, only 250 paramedics and members of the public turned out in support (Paramedic Association of Canada, 2012). Part of the professionalisation of any discipline involves communications and public engagement. Universities are masterful at showcasing achievements and new academic programmes. An ongoing challenge for the EMS profession is the need to raise public awareness and critical consciousness and to highlight the important social role and function that EMS plays in today's society. Everyone should understand and appreciate the extent to which paramedics serve the public good. *The Code of Ethics of the Toronto Paramedic Association* (Toronto Paramedic Association, 2012), for example, reflects a more compassionate path. However, in light of the example above, the author wonders how many Torontonians appreciated the commitment of their EMS workers to:

1. Conserve life, alleviate pain and suffering and promote health.
 2. Protect and maintain the patient's safety, dignity and privacy.
 3. Not knowingly or willingly to conduct themselves in a manner that contravenes paramedics' standards of practice.
 4. Provide care based on human need, with respect for human dignity, unrestricted by consideration of nationality, race, creed, colour, status, gender, religion, sexual orientation, age, type of illness, nor mental or physical disability.
 5. Preserve and protect the confidentiality of information, either medical or personal, acquired through professional contact with patients, except where the disclosure of such information is necessary to the treatment of patients and the safety of other health care professionals or as required by law.
 6. Not to use professional knowledge, skills, equipment or pharmaceuticals in any enterprise detrimental to the profession or public safety and wellbeing.
 7. Conduct themselves in a manner that will reflect credit upon the profession.
 8. Encourage the trust and confidence of the public through high standards of professional practice, conduct and experience.
- In Canada, despite their heroic public service, altruistic vision and goals, paramedic EMS salaries continue to remain low when

compared to other health and public safety professionals. These data are easily retrieved on the internet as salary comparisons by province are published in the public domain (StatCan, 2012). In 2011/12, paramedic salaries and can benefit packages ranged from \$29 000–\$57 000 a year, well below police and compensation figures for firefighters. By way of example, first class municipal police officers in Canada can earn between \$80 000–\$90 000 per annum.

When we add occupational risk and injury, not to mention PTSD to the equation, it is clear that EMS workers are compensated less favourably than other skilled public safety and allied health professionals. In reviewing the occupational health and safety literature (El Sayad et al, 2011; Reichard et al, 2011), a 2002 sentinel study estimated occupational fatality rates among EMS service providers in the US to be far higher than other North American workers. Data collected by researchers from the Department of Emergency Health Services, University of Maryland, the Department of Environmental and Occupational Health, University of Washington and others, demonstrated that the occupational fatality rates for EMS workers exceed those of the general population and are comparable with occupational fatalities of other emergency public service workers, notably police and fire fighters.

Two recently published studies in the *Journal of Emergency Medical Services*, confirm the incidence of occupational health and safety dangers encountered by EMS workers. Reichard et al (2011) noted that EMS fatality rate in the US is seven per 100 000 for full time EMS workers. From a comparative perspective, the average fatality rate for all American workers is 4.0, and 6.1 for firefighters, with 45 % of EMS worker deaths in the USA resulted from highway accidents. Non-fatal injuries involved sprains and muscle strains and the second highest rated injury was exposure to a harmful substance or environment including exposure to bodily fluids. One has to wonder whether the high incidence of highway accidents may be due in part to the fact that paramedics and firefighters, unlike police, do not always receive intensive road safety and driving skill courses. In another landmark article on occupational exposures, this time based on research in a single American city (El Sayed et al, 2011) focused on exposures experienced by Boston EMS workers over a three-year period. A total of 397 exposures were reported, the majority of which were related to meningitis (33 %), tuberculosis (17 %), viral respiratory infections (15 %) and body fluid splashes (14 %). For the author's part, after reviewing the scientific, peer reviewed literature (Maguire et al, 2002) on violence perpetrated against first responders and first receivers, the author was amazed to discover huge gaps. Fortunately, there were a few exceptions. Researchers from McMaster University found that:

'...paramedics are essentially the only medical personnel who are routinely at the scene of violent episodes, and they are more likely to be assaulted than are other hospital personnel. In addition to individual acts of violence, emergency medical services providers now need to cope with tactical violence, defined as the deployment of extreme violence in a non-random fashion to achieve tactical or strategic goals.' (Kollek et al, 2010).

An important contribution by Jensen et al (2011) noted that while EMS research in Canada has increased over the past two decades:

'...there has not been a unified national plan to enable research, ensure sufficient use of research resources, guide funding decisions, and build capacity in EMS research.' (Jensen et al, 2011).

In short, Canada is falling short insofar as we do not have a national agenda or set of priorities for EMS research.

Since the author has become involved in the occupational health and safety of paramedics from a violence prevention and reduction research perspective, a number of students and colleagues have voluntarily shared concerns and insights about their personal safety. The author is aware paramedics have been spat upon, punched, verbally and physically assaulted in the course of their duty. The author also knows others who have been terribly traumatised following horrific accidents.

Sadly, for some, as one friend put it, 'it has become time to move off the road for a while'.

Every day in Canada—emergency and public safety personnel quietly and selflessly perform thousands of essential lifesaving services in their communities. Those who hold the reins of power need to be reminded that in the middle of the night, if they or a member of their family needs a police officer, a firefighter or a paramedic, they should pray that a first receiver/first responder will be there for them. The author would also like to say that the absence of adequately funded 'gold standard' research on EMS occupational health and safety speaks volumes. The author finds it simply unconscionable that in this day and age we, and our elected officials, take EMS for granted. It behooves us all to better understand the 'lived' reality of paramedic practice workers and to speak up, and stand up, for an infusion of public resources into EMS education and research. There is an urgent, social imperative to improve working conditions and to mitigate the occupational health hazards and challenges facing these workers.

Several years ago the author gave a seminar on the risks facing Canadian nurses and EMS workers during the 2003 SARS pandemic. The author spoke of their courage, resilience and dedication to their professions in the wake of what became a terrifying moment of history, as 10 000 people were quarantined in Toronto alone and 44 deaths were attributed to SARS, including three health care personnel. The author left her gentle audience with the following thought and it was no doubt a message of self-interest:

'If we don't make a concerted effort as a society to care for and support those who dedicate their lives to the public good, then at the end of the day, who will be there to care for us? Let's stand up for paramedic practice!'

This commentary does not reflect the policies or views of the Justice Institute of British Columbia or University of Victoria.

For further information on WADEM please visit www.wadem.org.]]

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