

Operational Stress Injury in Paramedic Services: A Briefing to the Paramedic Chiefs of Canada



Ad-hoc Committee on
Operational Stress Injury

June 27, 2014

Table of contents

Ad hoc Committee on Operational Stress Injury - Members	3
Executive summary	4
Introduction	6
Context	7
Needs	10
Programs & Services	16
Coordination & Comprehension	16
Intervention.....	19
Prevention	26
Conclusion.....	27
Appendix 1: Resources	29
Appendix 2: Psychological Support Services by Paramedic Service	30
Appendix 3: GHQ-12	34
Appendix 4: CISM Core Components	40
References	42

Ad hoc Committee on Operational Stress Injury - Members

Jason DeBay, ICP

Island EMS Inc.: 902-853-2634 jdebay@pei.sympatico.ca

Jason is a paramedic in Prince Edward Island. He is currently working with a provincial committee examining psychological health at Island EMS.

Beth Simkins-Burrows

Ambulance New Brunswick: 506-872-6553 beth.simkins-burrows@smunbems.ca

Beth is a senior manager in human resources with Ambulance New Brunswick working from Moncton, NB. She is currently working on the issue of stress injury for Ambulance New Brunswick.

Charlene Vacon, PhD, AEMT-CC

Urgences-santé: 514-723-5698 charlene.vacon@urgences-sante.qc.ca

Charlene is a research advisor with Urgences-santé in Montréal, QC. She also works as a first responder for the local fire department in the town where she lives and is a licensed New York State critical care EMT. Charlene is the chair for this ad hoc committee.

Lori Gray, PhD, C.Psych

Toronto EMS: 416-392-5400 lgray2@toronto.ca

Lori is the staff psychologist with Toronto Emergency Medical Services. She is a clinical, rehabilitation and forensic psychologist and built the current Toronto EMS program for addressing operational stress and other mental health issues.

Richard Ferron, BEd, ACP

Niagara Emergency Medical Services: 905-984-5050 richard.ferron@niagararegion.ca

Richard is the Deputy Chief of Operations at Niagara EMS. He is currently working on a project to build a comprehensive mental health/stress management program for the service.

Andrew Taylor

Regina-Qu'Appelle Health Region: andrew.taylor@rqhealth.ca

Andrew is a paramedic and the chairperson of a committee that is looking to build a comprehensive mental health support program for the EMS service in Regina and the Regina Qu'Appelle Health Region rural EMS services.

Careen Condrotte, BA, RSW

Alberta Health Services EMS: 780-538-5438 careen.condrotte@albertahealthservices.ca

Careen is the Provincial Coordinator of the EMS CISM and Peer Support program. She is a social worker by training and has particular expertise around crisis intervention and post-trauma support with at-risk occupational groups. Before taking on this provincial role, Careen worked as a Regional Coordinator with Alberta Health Services Mental Health for critical incident response and suicide postvention.

Executive summary

Across Canada, paramedic services are working to understand how operational stress is affecting our **paramedics and dispatchers** in order to inform effective strategies that target psychological health in the workplace. **There is no all-encompassing off-the-shelf solution** for prevention or mitigation of operational stress; but, through our investigation we see that there are key components that look very promising for an overall approach to addressing operational stress and injury in our services.

Responding to **operational stress injury** and its risks is a **responsibility shared** with employees, government departments, unions, workers' health and safety boards, educational institutions and professional orders or associations. We recognise that as part of being caring employers, our paramedic services bear an important part of that responsibility.

A successful operational stress injury program is more likely if it is part of a global workplace strategy targeting both the individual and the organizational environment. There are four main elements to a successful **comprehensive operational stress injury strategy**:

- **Comprehension** and championing the issue within the organization: may involve an internal working group, surveys, **analysis**, auditing, benchmarking, **monitoring**, educating and advocating. Understand the amplitude of stress injuries and their presentation; examine workplace stressors; combat the idea that paramedics and dispatchers should 'suck it up'; coordinate the strategy; track progress
- Develop **prevention** strategies that target those who may be at risk, their environment, and the sources of injury: consider **awareness training**; consider **resiliency training**
- Create **intervention** services and strategies for those who are at risk of injury: to **mitigate injury**, consider providing Critical Incident Stress Management services, a **peer support program** offering **Psychological First Aid** and **outreach** to at-risk paramedics and dispatchers, and a robust Employee and Family Assistance Program
- Ensure early intervention, assessment, diagnosis and **treatment** options are accessible to those who are affected by an operational stress injury: treatment following diagnosis relies on medical and psychological expertise. While most employees have **group insurance coverage** for treatment of operational stress injuries, both the organization and the employees can benefit from direct access to mental health professionals, especially those who understand the unique work that our paramedics and dispatchers do.

A comprehensive operational stress injury strategy includes a large catchment of psychological issues, such as:

- Critical incident stress
- Anxiety and depression

- Cumulative stress, compassion fatigue and burnout
- Alcohol and substance use
- Acute post-traumatic stress symptoms
- Previous trauma history (family, previous military service, childhood trauma)
- Risks for suicidality

This report shows that while the work of paramedic services may be inherently stressful, by investigating the sources of stress in our organizations and amongst our employees, examining the organizational changes we could make, and building services and programs that address stress and psychological wellness, paramedic services can and are demonstrating a caring approach to employee well-being.

Introduction

Paramedic services share the responsibility for ensuring an adequate response to operational stress with their staff, as well as with related groups such as government departments, unions, workers' compensation boards and professional orders or associations. This brief, written from the perspective of the employer, examines some of the organizational responses available and those in current use among the various paramedic services represented on the committee *vis à vis* psychological support specific to operational stress.

The Ad-hoc Committee on Operational Stress Injury prepared this brief for the Paramedic Chiefs of Canada in response to a demand for information about current knowledge and practices from chiefs Alan Stephen of New Brunswick EMS, Nicola D'Ulisse of Urgences-santé and Ken Luciak of the Regina Qu'Appelle Health Region – EMS. These paramedic chiefs asked the ad-hoc committee to examine two aspects of operational stress and injury

1. A simple needs assessment of paramedic services across the country to better understand what their issues are in terms of stress and employee psychological health and what services they currently offer.
2. Promising approaches and services addressing cumulative and post-traumatic stress among paramedic services.

Insofar as the scope of this report is to examine how organisations themselves can best respond to operational stress injury, we see that, as with other forms of injury, the paramedic services at the forefront of proactive action on this issue address the following core elements:

- **Comprehension** and championing of the issue within the organisation
- Developing **prevention** strategies that target those who may be at risk, their environment, and the sources of injury
- Creating **intervention** services and strategies for those who are at risk of injury
- Ensuring **treatment** and recovery programs are accessible to those affected by an operational stress injury

Front-line psychological support and operational stress services ought to be accompanied by growth of the organization's understanding of and sensitivity toward critical (acute) and cumulative (chronic) operational stress and their effects on employees.

Programming preventative strategies focuses in large part on educating staff concerning stress and its management. Strategies may include training in personal resiliency to stress. They may also be expanded, as other injury prevention strategies have done, to include harm-avoidance or risk-reduction strategies. Other than education, prevention can include changes to organizational practices that help to mitigate or decrease stress. In this report, we discuss briefly how paramedic services are using prevention strategies and what those strategies entail.

Interventions related to operational stress among paramedic staff provide both an inherent injury-mitigation element and a bridge to further assessment or treatment for those who are identified as requiring it. Whereas prevention strategies take place for the most part temporally *before* exposure to stress, intervention strategies take place afterwards. The hope is that by offering accessible and appropriate psychological and emotional support interventions, the vast majority if not all of those exposed to an acute operational stress incident will recover from any injury without need for further professional psychological treatment. At the same time, interventions may help to identify those at elevated risk for more severe and/or longer-term stress reactions in order to refer these people for further psychological care to promote recovery. Without delving too deeply into the study of human psychology, we discuss some examples of the types of interventions that are currently in use in paramedic services in Canada, as well as considerations for implementing, coordinating and monitoring them.

Treatment of operational stress injury requires specific competencies and as such requires qualified professional implication. This brief does not investigate the various treatment options for psychological injury. However, we do examine how paramedic services may target at-risk personnel and refer those who are affected, as well as some of the issues to consider with regard to professional psychological services.

Context

Operational stress injury is the non-medical term used to describe psychological problems resulting from mentally and/or emotionally traumatic circumstances. Operational stress, however, is a broader term within this context. It is not limited to psychological injuries but includes exposure to incidents and environments that create distress in the people involved. Exposure may be either in the form of an acute trauma such as that sustained following a critical incident, or it may be in the form of repeated difficult situations that present cumulative stress leading to injury.

The most well-known form of operational stress injury, Post-Traumatic Stress Disorder (PTSD), is also considered to be the most serious diagnosable condition resulting from a traumatic event or events (Meighen 2003). PTSD indicates the overwhelming of a person's capacity to cope with an acute stress event 30 days or more post-exposure. It is a psychiatric disorder found in the Diagnostic and Statistical Manual of Mental Disorders, versions four and five (DSM-IV and DSM-5), both of which are currently in use as guides within the fields of psychology and psychiatry to assess and diagnose psychiatric disorders (Publishing 2013). Although it is sometimes used more colloquially to refer to any lasting psychological effects of trauma, PTSD is in fact a diagnosis which requires a physician or psychiatrist's assessment.

Post-Traumatic Stress Disorder appears to be increasing in public discourses such as we find in the news, in emergency responder services such as the military and police services and in its diagnosis among front line paramedic service employees. While statistics are somewhat scarce and those that we have must be carefully interpreted, it appears that claims filed with workers compensation concerning PTSD among paramedic services staff are on the upswing in at least some of our jurisdictions.

While PTSD is an important issue, and one that is receiving a great deal of current public attention, the most recent data suggests that it actually accounts for a relatively limited proportion of stress injuries (Adams 2013). Prevalence of PTSD in the general population may be in the range of 1-6% (Tuckey 2013). In a 2008 epidemiological study, the rate of current PTSD in the Canadian general population was estimated 2.4%, while traumatic exposure was estimated at 76.1%, suggesting that most people recover from traumatic events without psychological injury (Van Ameringen 2008).

The same holds true among emergency responders (fire fighters, police, paramedics, soldiers) who as a group are routinely exposed to traumatic stress: most will recover without experiencing PTSD (Adams 2013). With relatively frequent exposure to secondary (witnessing someone else's trauma) trauma, however, the prevalence of PTSD among emergency responders may well be higher than that of the general population. Psychologist and researcher Richard Tedeschi suggests that experiencing positive personal growth following trauma is actually more common than is PTSD (Rendon 2012). Unfortunately, studies that look at prevalence among emergency responders have generally used voluntarily-completed questionnaires, a methodology that may contain an inherent sampling bias. One UK study using this method found 22% of emergency services respondents met PTSD criteria (Bennett 2004). Among university-educated paramedic trainees, another South African study found that 16% met PTSD criteria (Fjeldheim 2014).

Previously, Halpern et al. suggested that among paramedics only a minority of incidents lead to PTSD, although other sequelae such as depression and burnout may also be related to critical incidents (Halpern 2009). Kleim and Westphal found that major depressive disorder and drug and alcohol related disorders, along with PTSD, were among the most frequent trauma-related disorders for emergency ("first") responders as a group (Kleim 2011).

Certainly, prevention, recognition and treatment of PTSD and other acute stress responses must be part of service-level stress and psychological programming. There is a need for effective response to various types of critical incident stress exposure among our services in order to help those who are exposed recover, as well as to identify those who are at risk for developing a debilitating stress injury. However, PTSD is likely better understood as a psychiatric categorization of what is actually a gradation in our human responses to critical incident stress: the introduction of a black-and-white divide where much shading exists. Other medico-psychological conditions associated with operational stress injury include depression, burnout, anxiety disorders and substance abuse. These other post-traumatic sequelae ought to be considered within organizational responses to stress injury.

What is more, for emergency responders the effects of *cumulative* stress must also be considered along with those of critical incident stress when developing operational stress injury prevention, intervention and treatment activities and strategies. In a Canadian study examining different kinds of stress in a paramedic service, Donnelly et al. suggested that "health and wellness initiatives should address the impact of both critical incident stress and chronic work-related stress" (Donnelly 2013). A longitudinal study begun in 1982 for the Victorian Ambulance Crisis Counselling Unit – the first of its

kind to generate baseline data on employee psychological health and revisit the indicators over twenty years – reported that employees' psychological distress symptoms by 2002 had changed from being more related to a traumatic incident to being more related to cumulative stress and stress stemming from other non-work related areas of life (Robinson 2002).

The notion of operational stress injury (OSI) is not only a more encompassing concept but it is also, by contrast to PTSD, a non-medicalized concept that may capture more of the different injury responses. While OSI may lack diagnostic precision useful for mental health-type responses, non-psychiatric lay personnel interested developing organizational programs addressing stress in the workplace may find OSI to be more useful for demarcating the subject within a workplace psychological wellness framework and developing paramedic-service based responses. There are many, varied individual responses to stress. The concept of OSI allows us to examine what those people who do not go on to develop PTSD may nonetheless require from their workplace to help in coping with or mitigating operational stress.

Recent work at the national level supports the idea of implanting operational stress injury strategies within a global organizational response that examines and plans around the many factors involved in psychological health in the workplace. The National Standard for Psychological Health and Safety in the Workplace, developed conjointly by the Canadian Standards Association, the Bureau de normalisation du Québec and the Canadian Mental Health Commission in 2013, is a good example of the multiple considerations that an employer can examine when assessing workplace mental health and safety (Bureau de Normalisation du Québec 2013). The first of its kind in the world, the standard addresses themes that an organisation should consider in improving health and implementing the standard (Canada 2014b). It does not, however, recommend specific models of prevention, intervention or treatment. The Mental Health Commission of Canada also launched, in January of 2014, a 3-year research project on the implementation of the strategy in 25 workplaces across Canada (Canada 2014a).

As with the workplace standard, it is beyond the scope of this brief to recommend specific response models for Canadian paramedic services. We do, however, recommend that paramedic services work to develop multi-faceted approaches to operational stress injury. Readers will find here suggestions to consider for working toward a comprehensive psychological health and safety plan for the workplace, which begins with assessment of local needs and benchmarking. We present here some of the key issues that we have faced vis à vis OSI across the country, and some of the strategies that our paramedic services are effectively using to address prevention and intervention on this issue.

Needs

The ad hoc committee identified the following issues facing our organizations with regard to operational stress injury, creating programs that effectively address this problem, and monitoring our efforts. We present these seven core principles for creating effective responses to operational stress:

1. Realize responsibility across stakeholders for addressing operational stress
2. Alter organizational behaviours to mitigate stress and to better identify and support those at risk of operational stress injury
3. Identify local paramedic services' operational stress issues
4. Consider prevention, intervention and treatment strategies in programs
5. Develop delivery models specific to operational realities
6. Provide targeted operational stress programming for different kinds of frontline staff
7. Measure the effect of operational stress programs and initiatives

While we discuss common themes, comprehension of operational stress at the local level necessitates service-specific examination of each of these issues.

1. Realise responsibility across stakeholders for addressing operational stress

Workplace champions may want to consider developing a business case for their own organization, so that decision-makers can review the impact of stress and operational stress injury. The national standard, *Psychological health and safety in the workplace - Prevention, promotion, and guidance to staged implementation*, contains some ideas that may help with building a business case (Bureau de Normalisation du Québec 2013). The arguments in the Leadership Framework for Advancing Mental Health are also tailored to helping craft a business case (Canada 2013). Unions, professional associations, and, where paramedic services are not direct government services, government departments also have a responsibility to work toward mental health programs that are meaningful to their members or constituents. When developing programming, ensure that stakeholders are informed and aware.

2. Alter organisational behaviours to mitigate stress and to better identify and support those at risk of operational stress injury

The acts that people engage in everyday become what is understood as the organizational culture. Within structural realities such as resource constraint, the dominant discussions and behaviours may focus on ensuring that operations are running well. Encouraging front-line staff to contribute can, however, be taken to extremes where their needs are not balanced against the operational requirements. Programs may consider sensitization of management, including frontline supervisory staff, on stress and stress injury. Championing supportive environments among

operational staff and management may be one of the program's challenges. If so, consider who may be appropriate to coordinate and champion the organizational response in this context.

3. Identify local paramedic services' operational stress issues

The ad hoc committee identified the following psychological issues and risk factors as prevalent concerns among our paramedic services. Not all of these concerns are present in all of our services, and local programs for paramedics and dispatchers should examine which of these are most important in the local context.

- **Critical incident stress**
Psychological and peer support services work to ensure that those at risk for stress injury following certain types of witnessed or experienced traumatic events are located and supported. Incidents that are poignant, dangerous or gruesome may be flagged for support (Halpern 2009).
- **Anxiety and depression**
- **Long-term or cumulative stress and compassion fatigue**
While it is more difficult to target those at-risk from long-term and cumulative stress injuries than those exposed to critical incident stress, a more global psychological support approach will consider these risks in programming.
- Acute and posttraumatic stress symptoms and **PTSD**
- **Non-workplace exposure to psychological injury**
Employees who are struggling with non-work related psychological issues or who have been psychologically injured in the past may be carrying those problems with them in the workplace. For example, those who have had previous military service may have had considerable exposure to stress or those who are struggling with issues at home such as a troubled child may have high levels of stress. It is not clear how far the employer should venture into employees' lives outside of work to help ensure that they are healthy for work.
- **Substance abuse**
Use of drugs and alcohol to 'self-medicate': Psychological support programming may consider ways to reach out to people who are using and abusing drugs or alcohol. Some prevention training discusses inappropriate use and abuse of substances to manage stress through pre-incident and post-incident education.
- **Psychological effects of chronic pain**
- **Burnout**
- **Suicide** has been a concern for many of the paramedic services. Supporting those who are experiencing suicidal thoughts may be part of the ongoing work of psychological support services. Suicide risk among

front-line caregivers may present differently than for the general population, making it more difficult to locate those who are at risk.

4. Consider prevention, intervention and treatment strategies in programs

While intervention is focused on providing services to those who are experiencing the effects of stress or who may be at risk of stress injury, prevention targets all staff who may at some point be stressed within the context of their work. Intervention strategies require systems to identify those who may be at risk of stress injury, while prevention blankets large groups of mostly healthy people with tactics designed to reduce their exposure to stress and/or the risk of injury from stress. Intervention includes support services, for example, while prevention may include sensitivity training. An example of a prevention tactic is Alberta Health Services EMS pre-incident Critical Incident Stress Management awareness, which is included as part of the core content of its provincial orientation process for all new EMS recruits. Treatment will be necessary for some, and provision for adequate professional resources needs to be planned in terms of who will offer these services to employees, the mechanisms for employees to access the treatment services, and an assessment of the costs associated with provisioning these services. Tracking outcomes and indicators for all of these strategies is good practice.

5. Develop delivery models specific to operational realities

Organizational challenges such as distance, scheduling and number of personnel mean that the way intervention and prevention programming is delivered will need to be tailored to different prehospital settings. For example, in paramedic services where personnel are based in stations or platoons, embedding trained peer support personnel may work well as an intervention strategy. By contrast, in paramedic services where staff are dispersed, support that uses telephone or text messaging may be more appropriate to timely response.

Front-line paramedic service personnel respond quickly to incidents. It follows that, when they require support for an incident, paramedics, dispatchers and their supervisors expect a quick response from whoever is offering support. Responses that are not quick may be perceived by emergency responders as taking too long. While the fundamental goal of early interventions is comprehensive assessment that tailors the nature and level of intervention to the circumstances and needs, combining stress intervention strategies such as defusing, offering decompression time, one on one check-ins and group debriefing, may be important not only for the support that they offer, but also for addressing emergency responders' perception that response must be quick. Discussing and promoting why different services are provided at various delay intervals may also help to reassure employees.

Operational stress injury programming may be coordinated through operations, quality and learning, human resources or on its own, reporting directly to senior management. The context in any organization helps to determine where the best office of coordination will be found. In the services represented on the Ad-hoc Committee, operational stress

programming is coordinated along with other types of psychological support services within the same administrative unit.

A few issues are notable for those examining where to house mental health or operational stress programs within the paramedic service. Operational stress management services housed in the human resources department, for example, may find it difficult to establish credibility among frontline staff who may view human resources more as watchdogs than as confidants. Operations may not have the resources or staff expertise to devote to psychological support. Since the structure, governance and operational realities of paramedic services are so varied from province to province, there is no one 'correct' place to house and develop operational stress services; what is important is that where support services are concerned, they are able to efficiently and effectively work directly with frontline staff, and this with an assurance of complete confidentiality.

6. Provide targeted mental health programming for different kinds of frontline staff

While both paramedics and emergency medical dispatchers (EMD) work within the stresses of the pre-hospital environment, it must be recognized that the stressors for each, as well as the training and the challenges of each, is different (Gurevich 2009). In paramedic services where various kinds of front-line staff exist, operational stress program personnel need to be cognizant of the particularities of the work of different kinds of emergency services staff, as well as the stressors that are present for particular staff groups. This decortication of employee exposure to stress and support available may need to be further broken down to ensure advanced care paramedics, supervisors and other field managers exposed to the risks of stress injury have adequate support. Depending on the context, it may be important to look at offering operational stress programming to the fire service or other medical first responders.

When planning psychological support interventions following a critical incident, for example, it is important to consider how mixing different types of employees would be perceived in a group defusing session. While the aim is to ensure that everyone involved in the critical incident gets support, the options for delivering that support should be considered within the context of the individuals involved. Best practices indicate that groups are determined based on homogeneity before the trauma, as well as similarity in the nature and duration of trauma exposure. The support must ensure a non-judgemental, non-disciplinary, and completely confidential setting for all the participants.

Paramedic Stressors: Critical incidents that involve harm to others are a major factor in stress and stress injury. Although the paramedic is not directly implicated in the harm, their proximity to their situation is inherently stressful. Situations where paramedics are directly in harms' way, such as an active shooter scenario, are rare but will happen given the nature of emergency response work. These also are stressors.

Auditing or surveying the paramedic service will certainly show work-related stressors other than these critical incident situations. Some that have been identified include poor

sleep, shift work, unscheduled overtime, poor nutrition, missing meal breaks, operational or clinical errors, harassment or bullying, poor relationships with supervisors, and situations where paramedics feel a loss of control over their environment.

Paramedics have an increasing amount of education which, in some jurisdictions, includes pre-hire courses in paramedic services' stress and stress management. In Quebec, provincial standardized college training includes a course on paramedic stress and psychological well-being. Psychological support service coordinators may want to investigate what foundational information on operational stress and psychological wellness paramedics receive.

Dispatcher Stressors: In addition to reporting some of the same stressors as paramedics, emergency medical dispatchers (EMD) report the following stressors unique to them:

- Call overload; decisions about priority status and language barriers which hamper decision-making and create stress
- Insufficient resources in dispatch and ground staff for the number of calls
- Environmental conditions of the centre – temperature, ergonomic equipment, absence of quiet rooms
- Adversarial relationship between EMDs and paramedics; having one's hands tied; reprimanded for sending too much/too little help
- Personnel are more guarded/secretive due to experiencing verbal ridicule; less likely to seek support from peers and/or supervisors
- Those with prior EMS experience emphasized greater magnitude of cumulative stress compared to their work as ground EMS (Gurevich 2009).

7. Measure the effect of operational stress injury programs and initiatives

At the outset of program development, identify the outcomes that the program is designed to attain. Include measurable indicators. If the program is built to respond to the seven core principles examined here, measure how it achieves them. Baseline data should be obtained if possible, in order to track how operational stress is developing in the paramedic service and investigate programming effects or associations.

As we know from prehospital clinical research, it is desirable to measure the outcomes for those who are treated. It is also notoriously difficult to measure treatment effects on human health outcomes. Since a large part of operational stress programming is focused on prevention and mitigation, program outcomes should also target these. However, measuring prevention effects is perhaps even more difficult than measuring treatment.

Given these constraints, some key program measures may include

- Measuring the number of contacts with psychological and peer support services,



- Tracking resiliency, awareness and intervention training
- Tracking the number of interventions by type (CISM, support, alcohol or drug dependency, etc),
- Tracking what types of people contact psychological or peer support services (at-risk person, supervisor, peer),
- Tracking operational or structural changes achieved within the program

Outcome measures may include

- Monitoring the number of Workers Compensation Board traumatic mental stress or other stress injury-related claims – while remaining aware that claim reduction may not be the outcome of stress injury programming as more people may actually be encouraged to come forward for support or treatment.
- Monitoring the number and percentage of traumatic mental stress or other stress injury-related claims approved by Workers Compensation Boards. In some jurisdictions, paramedic claims for PTSD to WCB are rejected because proximity to trauma is known to be part of the paramedics' work.
- Surveying the attitudes, knowledge, beliefs and behaviours at key milestones during the development and implementation of support programs.
- If a business case is developed, key financial indicators used in the case (e.g. lost time, workers' compensation premiums) ought to be tracked

Other measures to track for descriptive purposes include

- Demographic characteristics of service users
- Training provided to peer support team members
- Training (awareness or sensitization, for example) provided to staff and leadership

Programs & Services

We are quite convinced of the need for programs and services addressing operational stress, coordinating and championing the organizational response to operational stress injuries, and offering psychological support to the frontline personnel in our paramedic services. While some may prefer that such services are developed through careful examination of the empirical evidence, the fact is that such evidence is limited, especially that which examines paramedic services. While the research that may be most relevant is sparse, there are a few studies that look at both paramedics and at emergency medical dispatchers. As readers, we must note that language such as 'emergency responders' or 'first responders' is non-specific and may not even include paramedics or emergency medical dispatchers.

Where there is research, we offer it. Otherwise, this section develops an overview of the interventions, strategies, and services that we believe work best in the context of operational stress injury by turning to the lessons learned among the different paramedic services across the country participating in this review. As with most new programs or strategy implementations, part of your approach may include testing or piloting it with a limited group or in a more controlled situation so that you can assess and adapt to the situation at hand.

We have identified four main branches of organizational response to stress injury: **coordination** which includes championing and building the response to this issue, **intervention** which includes both support and treatment, and **prevention**. Treatment is the fourth; however, we leave this subject for specialist review. While the greatest emphasis is usually placed on intervention, creating a supportive, effective long-term operational stress management programming takes all three paramedic service-level elements into consideration.

Coordination & Comprehension

Educating, advocating, organising, supporting

Program pre-development: While there is a growing sense across the paramedic services represented in this report, as well as in other emergency services across the country, that operational stress injury is an important issue, we do not have a good understanding of the amplitude and extent of the problem among paramedic services. Figures are repeated about the extent of psychological problems within paramedic services, but often from inappropriate source references or from questionable methodology. What is more, the type of psychological issues addressed in research and analysis is often limited to suicide or PTSD, when we know that there are other important injuries as well as other problems associated with operational stress.

For these reasons, it is important that services wishing to implement or improve programming on operational stress injury undertake analysis of the problem at the local level. As well as avoiding assumptions about what stress management and mitigation measures may be needed and what the main issues are, local examination allows

various stakeholders to engage in the organizational response. The analysis may include discussion within the organisation of the problem of stress injury, surveys of those closest to the problem and those who will be involved in the response, and/or study of the extent and presentation of stress injury and its risk factors. It is a useful idea to have a commitment to action before undertaking service-wide investigation of operational stress or other psychological health issues. Engagement with these subjects may encourage concern with psychological health within the service or with the responses that have been available. Expectations may be raised to then deliver new or altered programs or services.

Psychological testing for baseline work-related mental health issues is also possible with validated tools (Lesage 2011). An example of a widely tested tool, the GHQ-12, which is available in French and English, is appended. The questionnaire has been well-validated through research, including in the modified version for workplace mental health which adds the terms "at work" to limit respondents to the workplace context (Lesage 2014). It should be noted that this particular tool is included for information purposes. However, the Ad-hoc Committee does not make any recommendation on the choice of tools, since that choice and the interpretation of results should be done by the paramedic services with the help of mental health expertise.

In order to build programs that are responsive to the needs identified by those on the front lines, Toronto EMS used an anonymous questionnaire distributed during continuing education to collect initial opinions from frontline staff. This polling got 100% response. By contrast, studies that rely on voluntary response to surveys may get 20-60% response, which introduces an important potential bias. Collecting information from all concerned employees is certainly desirable from the point of view of analysis, as well as in building responsive programs. Approaches that engage a large number of employees may also help with buy-in for the responses that are chosen for program development or improvement, which seems to be the case at Toronto EMS.

Early surveying can also be used to examine pre-program attitudes and knowledge. In New Brunswick, discussions among the management showed that even the so-called "old guard" (those who may believe that paramedics should be psychologically toughened) support putting operational stress injury programs in place. In program pre-development, project staff can assess both needs and attitudes and promote OSI awareness in the organisation while develop programming accordingly.

Centralized unit of responsibility: both Toronto EMS and Alberta Health Services have full-time, centralized coordination of their psychological support services while maintaining dispersed operations throughout the field. Other services, by contrast, have coordinators that also work on a number of other projects and files while acting as a hub for psychological support services.

The coordinator assesses incoming requests from a variety of sources, ensures the recruitment and training of peer support volunteers, and maintains resource and referral functions. In addition to helping people within these organizations know where to call to get help, centralized models can allow tracking of overall program performance, standardization of programs across differing operational models and coordination of training.

It is important that the coordinator be well-versed in the paramedic service's operation and culture, or open to learning. Other considerations in choosing appropriate coordination include the needs in terms of organizational learning around stress injury, ability to build referral networks, the capacity to recruit and screen program staff (peer volunteers as well as professional staff), and the ability to build and track a confidential intervention system.

Program coordination also has to be attentive to peer support, if that is the model used to intervene among paramedic service staff. Peer supporters are caring for the caregivers, and are already exposed to the same sorts of traumatic and operational stress as the colleagues they support. They require committed follow-up and support for themselves in order to remain healthy and effective in their peer support roles.

Centralized coordination also addresses two important considerations for maximizing the reach of response efforts. First, packaging of the various services and strategies together as a "program" or as a cohesive group of services and initiatives creates more acknowledgement, understanding and, potentially, reassurance of the extent of the paramedic service's efforts. Second, coordinators can work on planning and implementing a communications strategy for what the paramedic service is doing to address operational stress injury. This may increase the chances that employees find out about the services and feel that their needs are getting addressed. Paramedic services working with their unions and with continuing education services are having some success promoting the services they have. Given the effort required to plan and undertake sustained communication, it may be more successful being spearheaded by someone who is clearly responsible for the program success such as a coordinator.

Training and support for peer volunteers

If programming includes peer support volunteers, the ad-hoc committee attests to the fact that they require more training than that which is necessary to intervene with colleagues after a critical stress incident. Critical incidents remain a fraught and important part of the work that the frontlines do, and must continue to be addressed in response to stress injury. Critical Incident Stress Management training, such as that endorsed by the National Organization for Victim Assistance (NOVA), the International Critical Incident Stress Foundation (ICISF), or the Canadian Critical Incident Stress Foundation (CCISF) is available as accredited courses (see Appendix 1).

To build the capacity of peer support volunteers to work with other kinds of stress, however, and to ensure that their peers who are in need are confident in the training volunteers receive, peer support volunteers may be trained in prevention and intervention strategies for cumulative stress, compassion fatigue and other psychological issues they may face in their peer support work. These à la carte trainings will need to be tailored to the needs identified in each organization. Peer support volunteers will quickly be exposed to other forms of psychological need, and training to handle at least an initial intervention and referral may be helpful.

A peer to peer mentoring system may be useful for new peer support team members. In Alberta Health Services EMS, new peer support members are mentored by

experienced team members for up to one year. Peer-to-peer support team member check-ins may also be considered for monitoring the well-being of those on the team.

Mental Health Personnel sensitive to the contexts of people working in paramedic services

Both prevention and intervention programming will need to liaise with mental health professionals, whether it be to do training or for treatment referrals. When it is necessary to consult with mental health professionals, frontline staff, in particular, voice the need to have mental health professionals who understand what emergency medical services people do. Treating emergency services personnel as fellow caregivers and colleagues versus as civilian clients is important in building trust and respect.

Programme Quality Assurance and Improvement: As operational stress programming develops, measures to systematically alter its service offer may also be developed. At Alberta Health Services EMS, for example, all new recruits complete an evaluation following the Pre-Incident Education during the standardized Orientation of New Recruits. Based on the responses of this questionnaire, future revisions and/or additional training are considered. Post-intervention evaluations are another example that may be useful to identify what employees feel is useful and what they would like to see changed. These are the same types of feedback systems with which we are familiar in the context of quality assurance planning.

Intervention

Psychological support resources, personnel

Intervention involves reaching those who may be at risk of OSI following incidents and exposures to operational stress. Whether proactive or reactive, intervention to date among our paramedic services has tended toward targeting those exposed to critical incident stress. Proactive intervention is, for example, early outreach (e.g., check-in that is conducted in person or via phone or text message) to paramedics who have just completed a difficult call. Reactive interventions are responsive to an identified need, such as a paramedic asking for psychological support services to contact a colleague who is depressed. Reactive interventions wait for identification of affected employees, rather than proactively reaching out to employees at risk. Programs in Alberta and Toronto are including support and/or intervention to those who may be experiencing depression, substance abuse or other psychological problems related to long-term operational stress by encouraging peers and supervisors to confidentially identify colleagues with whom they are concerned.

An important decision in program development or restructuring is whether psychological support services will be oriented by a mental health care (medical) model, by a peer support (lay) model or a combination of the two. Provision of mental health care, whether through Employee Assistance Programs, insurance coverage or direct access to mental health professionals through the paramedic organization, is essential for those who are identified as requiring this specialized care. Mental health professionals are also useful in staff training. The pillar of operational stress support services can, however, be based on peers who are trained in supporting colleagues. In addition to

intervention, peers may help educate employees about stress and stress management as well as promoting the organizational services that are available for prevention, intervention and treatment.

Mental health professionals: Mental health professionals involved with intervention and treatment may come from a variety of backgrounds. Psychological counsellors, therapists, clinical social workers, and other professionals that specialize in therapeutic techniques may be considered for programs developing a mental health professional network. These professionals may also provide treatment services. However, the credentials required by Workers Compensation Boards for dispensing treatment may be limited to medical certifications such as psychiatrists and psychologists. In Saskatchewan, the Employee Assistance Program provides counsellors. However, the Workers Compensation Board requires that paramedics be seen by psychologists.

Toronto EMS has a designated, full-time psychologist who provides early psychological intervention, supervision, training, and selection of the Peer Resource Team, education, consultation, and links to ongoing psychological care. Toronto EMS also has a referral network for circumstances when long-term care is required or other professional expertise (e.g., financial counselling). In Alberta Health Services EMS, referrals to mental health professionals include resources provided by the Employee Assistance Program, certain identified professionals in private practice, or professionals affiliated with the Workers' Compensation Board PTSD treatment program.

Paramedic services with a mental health professional on staff benefit from having his or her expertise to advocate for programming, as well as to train and support peer volunteers or others who may require increased sensitivity to psychological issues such as management. They are also able to directly support education initiatives and they have expert knowledge of the psychological issues to consider when developing new programs. Importantly, an in-house mental health professional also offers supervision and quality assurance for peer-driven teams thereby ensuring the standards of psychological care delivered to paramedics and EMDs.

In paramedic services that do not have a mental health professional on staff, it is useful to find ways to consult with these experts. Whether through developing a network, linking with the existing mental health services, or through hiring a consultant, mental health expertise is necessary not only for identifying difficult and problem situations within any existing support services but also for training or educating in-house staff and for adequately developing programming.

Mental health referral network: It is useful for program coordinators to develop referral networks for mental health professionals in order have good access to these resources, especially since there can be a good deal of red tape and delays in the healthcare system. Screening mental health professionals can help in identifying mental health professionals in the community who want to work with paramedic services and who understand or are willing to learn that paramedics and dispatchers are frequently exposed to difficult, stressful situations.

Peer support: Volunteer peer support is a low-intrusion way of reaching out to front-line staff who may be in psychological or emotional distress. Among paramedic services

personnel, who are often leery of becoming the patient, using peer support may be seen as a safer way of asking for help. Where meeting with mental health professionals who are part of the healthcare system may take weeks or months, likely involves considerable paperwork, and requires adherence to policies and procedures outside of the paramedic services' control, peer support can be almost immediate, very accessible, and managed within the paramedic service. Peer support, when implemented along with a trusted referral system to mental health professionals, can also be very responsive and/or proactive in contacting and following up with frontline staff who may be logistically difficult to reach.

Recruitment of trustworthy, empathic, and psychologically healthy volunteers for peer support programs is fundamental to their success. The importance of choosing the appropriate peer support volunteers cannot be overstated, as this has already derailed more than one peer support program. The committee heard reports, some of them first-hand, of peers who self-nominated for support programs and were not people that others in the organization felt comfortable approaching for support. Successful peer support programs place emphasis on confidentiality and discretion. Part of the assurance of trust and confidentiality is a clearly articulated zero-tolerance approach to breaches of confidentiality.

Alberta Health Services EMS uses a Call for Interest process where personnel submit an application. The applicants are first interviewed by a panel of trained peer support members before participation in an initial training session. Decisions about the applicant's suitability for the peer support team are only made at the end of this process.

Another creative method used with success for recruitment in Toronto is to ask the peer group (paramedics or dispatchers) to name several people who they would go to for emotional and psychological support. This list can then be used to approach people who may not otherwise self-identify in an application process. Toronto EMS also included a panel interview and psychological screening process as part of team recruitment. In small services or rural areas, however, where the pool of staff to draw on is much smaller and the need for discretion among overlapping social circles is perhaps even greater, peer support initiatives face added challenges.

Following recruitment, psychological screening of potential volunteers may be considered to help ensure that volunteers are healthy and able to intervene appropriately among their peers. Peer support volunteers will also themselves require follow-up support during the course of their work either by the program coordinator, senior peer support members or mental health professional to ensure that they are staying psychologically healthy. This may include routine screening, wellness checks, and ongoing supervision and training.

In all the services with peer support programs, those who are accepted into the peer support program receive CISM training. This is a standard training program developed and certified by the International Critical Incident Stress Foundation (Appendix 1; each course is 2 days – Group Crisis Intervention (2 days) and Individual Crisis Intervention and Peer Support (2 days), with a total of 4 days for this program). Toronto EMS also uses a second CISM training, the crisis responder training from the National Organization for Victim Assistance. Other services include add-on training for peer

supporters in cumulative stress, loss and grief, compassion fatigue, divorce and separation, Mental Health First Aid, Suicide Intervention or other issues that may be identified as pertinent in particular paramedic services.

Generally, there is a strong tendency toward using a *volunteer* peer support model to help recruit and train peer supporters as a way to select those who are motivated by altruism rather than other types of gain. That said, the volunteer models take into consideration collective agreements when deciding whether volunteers will be compensated for training and interventions by paid or in-lieu time.

Supervisors/Workplace support: Front-line supervisors appear to play an important role in support. In Canadian research, dispatchers indicated that supervisor support was the key professional resource central to recovery from a traumatic stress incident (Gurevich 2009). Supervisor support ought not to replace early psychological interventions, however, a point which may not be clear from the findings of this study.

In addition to encouraging managerial staff to support employees during stressful times, programs may consider sensitization of management, including frontline supervisory staff, on occupational stress and stress injury. Championing supportive environments among operational staff and management may be one of the program's challenges. If so, consider who may be appropriate to coordinate and champion the organizational response in this context. It may be that the coordinator will require more champions. For example, Alberta Health Services EMS has trained leadership at various levels throughout the province to champion for and raise awareness of support services.

Employee Assistance Programs (EAP): While employee assistance programs are not a panacea, it is worth noting that all the services who participated in this report have EAP in place. Without an EAP, employees who may benefit from counselling or even psychological assessment may not have an accessible mental health provider. For this reason, the EAP seems to be a foundational resource in a workplace mental health strategy. With that said, paramedic services have been able to identify certain shortcomings and needed improvements to EAPs.

On the side of the shortcomings, Employee Assistance Programs often fall short in providing staff that is familiar with paramedic services. There seems to be a general lack of knowledge among EAP providers as to the reality and culture of caregiving in prehospital emergency services. There are reports from services of previous negative messaging from EAP counsellors along the lines of counselling paramedics to move into other lines of work if they cannot take the stress of being a paramedic. In the Toronto EMS study, less than 2% of paramedics and EMDs stated that they prefer the EAP for psychological support.

Improvements to EAP services include the inclusion of family members in the support available (**Employee and Family Assistance Programs**). In Alberta, for example, another positive step is recent collaborative meetings between the Alberta Health Services EMS CISM & Peer Support Program and the Employee and Family Assistance Program (EFAP) Trauma Counsellors. The meetings resulted in greater understanding of each others' challenges. Such dialogue can encourage progressive change to the referral practices and responses by the EFAP providers.

Proactive 'Check-in': Using texting and phone calls, Alberta and Toronto have both instituted programs whereby frontline employees who may be having mental health problems or simply facing a psychologically difficult situation are contacted within a very brief time from the referral. These 1:1 check-ins may happen at the request of a supervisor after a difficult call, for example, or at that of a peer who has noticed a colleague who appears to be in difficulty. The referral can come from anywhere in the organization to a centralized coordinator, who then reaches out or has one of the peer support volunteers reach out. Both the referral and the check-in are confidential, and any paperwork that is filed following peer support does not identify the people involved in any way.

"Check-ins", which get their basis in the Individual 1:1 intervention within the Critical Incident Stress Management model, are very good at locating people in need, and defusing stress before it creates distress. Alberta Health Services EMS has seen a marked decrease in the use the small group intervention Critical Incident Stress Debriefings and attributes this to the fact that check-ins target those who may be at-risk and also help to identify those who may benefit from a group intervention or other resources.

CISM: Critical Incident Stress Management (CISM) is a comprehensive, multi-component psychological support program branded through the International Critical Incident Stress Foundation. CISM is intended to facilitate natural recovery (i.e., rebound and recovery from critical incidents) and identify those at greatest risk, so that referrals to best practices treatment can be expedited. Accordingly, CISM is intended to reduce symptoms but does not necessarily decrease the prevalence of PTSD. CISM does play an important role in early identification and access to the best practices care – but it is the psychotherapy treatment itself that subsequently is intended to decrease the disorder. Accordingly, studies about the efficacy of early intervention should include measures such as symptom reduction, improvements in quality of life, and improved social support and cohesion.

It is worth noting that a great deal of energy has gone into debating the merits of Critical Incident Stress Debriefing for all sorts of different groups, including paramedic services personnel. We caution paramedic services to be attentive to the many facets of operational stress, as well as to the multiple components of CISM. Becoming distracted by the debate may draw the focus of interventions and program development away from the needs. With some hesitation, however, we present a brief discussion of critical incident debriefing so that paramedic services may understand the debate.

In the 1980s and 1990s, three main models were developed for post-trauma debriefing interventions among emergency services personnel in the hopes of decreasing the psychological harm caused by trauma. By the 2000s, Critical Incident Stress Debriefing (CISD)¹ put forward by Mitchell (Mitchell 1988) and psychological debriefing (PD) put

¹ CISD in the Mitchell model is a group debriefing process consisting of seven protocolised stages: introduction, incident, thoughts, reactions, symptoms, teaching, and re-entry.

forward by Dyregrov (Dyregrov 1997) and by Armstrong et al.² had become the subjects of controversy surrounding their efficacy, benefit or harm for people at risk.

A Cochrane Review published in 2009, an update to an ongoing review begun in 2002 on this issue, recommended that compulsory debriefing after exposure to a potentially traumatic psychological event should cease (Suzanne Rose 2009). The review and other systematic reviews cast a pall on CISD and PD, and created both controversy and unease with the methods. Those using Critical Incident Stress Management methods on the Ad-hoc Committee, however, note that it is inappropriate to provide “debriefing” only (one type of intervention within the comprehensive CISM model). What is more, there appear to be methodological flaws in some of the studies cited in the Cochrane Review. It should also be noted that the Cochrane Review, as well as the recent review by Adams et al. are specific to debriefing in the context of PTSD. As we mentioned above, measuring incidence of PTSD is not an appropriate indicator for early intervention research. CISM debriefing has, however, been shown in randomized controlled trial to positively affect post-intervention quality of life and alcohol use (Tuckey 2013). In randomized controlled trials (of which there are 3), CISD for group intervention of emergency responders with secondary exposure to potentially traumatic events “has not been associated with harmful psychological health or well-being outcomes” (Tuckey 2013).

CISD/PD interventions were specifically developed for voluntary group intervention among high risk occupations – such as frontline paramedic service personnel – and not for the general public, not for use as compulsory interventions, and not for use on an individual basis (Regal 2007; Tuckey 2007). For emergency “first” responders, groups who are regularly exposed to operational trauma and who spend considerable hours together as partners or as a team, BMJ Best Practice suggests that group psychological debriefing may indeed still be useful: «Psychological debriefing, according to the reviews, is definitely not recommended for individuals. It might work for groups and specifically for first responders» (Practice 2014).

Some organizations, including the Canadian military, have moved away from group debriefing as an early post-trauma intervention method. However, those paramedic services represented on the Adhoc Committee on Operational Stress Injury who were already using CISD continue to do so. Alberta Health Services EMS uses the Critical Incident Stress Debriefing group intervention as a second-tier response when feedback from their Individual Check-in (1:1 intervention) system seems to indicate it is warranted. Similarly, Ambulance New Brunswick and Urgences-santé will follow up with debriefing by mental health professionals of those who are identified, either in peer defusing or by supervisors, as in need. Toronto EMS has recently de-emphasized the critical incident as the focus of psychological support services, focussing instead on the broader category of stress that may lead to injury. However, psychological support remains active and available there for critical incidents. Critical Incident Stress Management (CISM) on the whole, which makes use of group psychological debriefing as one part of

² Armstrong's debriefing model was specific to emergency services personnel. It has four prescribed phases: disclosure of events, feelings and reactions, coping strategies, and leaving the disaster.

a strategy to prepare, intervene and support those who are exposed to critical incident operational stress continues to be in widespread international use (Practice 2014).

While prevention of PTSD sounds like a rational goal for employers, it may only be an ideal - and one likely not even attainable. Many individual factors, such as previous experience, mental health history, coping strategies, family and personal situation and emotional disposition, combine for each person. Larger social contexts such as the increasingly widespread discussions of PTSD, economic upheavals, or even political uncertainty also create an environment where certain conditions become more prevalent. Even changes to the definition of PTSD can alter its rate of diagnosis. The best workplace programs for systemically and individually monitoring and mitigating stress simply cannot ensure PTSD prevention in this complex web of relations and feelings.

At the same time, the employers' responsibility is to work to prevent harm and to promote employees' health as it related to his or her job. In the context of operational stress, it is clear that our paramedic services present challenging environments. Indications are that the work creates additional risk for our front-line staff of stress injury when compared to many other occupations (Hegg-Deloye 2014). Prevention of PTSD may not be the best indicator of program success when it comes to operational stress injury, however this does not change the fact that it is important that operational stress prevention and intervention mitigates the potential for all types stress injury.

Defusing is another post-trauma small group intervention technique (Tehrani 2004). While debriefing takes place 48-72 hours after a potentially overwhelming event, defusing takes place much earlier (typically within 12 hours of the event, and before 48 hours). Defusing is a structured small group intervention, allowing participants to talk about the incident and their feelings in a safe and confidential context and get information about other support that is available to them. Defusing developed as a group intervention technique in CISM, but is also used in a somewhat different form as part of a **Psychological First Aid** (PFA) program. Institutions such as the World Health Organisation, US Department of Veterans Affairs, and the Australian Red Cross promote the use of Psychological First Aid among the general population following traumatic events. It is used in those paramedic services represented on this committee who have more developed psychological support programs.

Tema Conter, an Ontario foundation dedicated to the issue of traumatic stress among first responders, promotes a psychological first aid approach for use among peer support teams within first responder services. The approach is called **MANERS** - for Minimise the exposure, Acknowledge the impact, Normalise the experience, Educate as required, Restore or refer, and Self care - and was developed in the Victorian Ambulance Service, an Australian paramedic service.

Risk-management: The role of organizational **crisis management** and **risk management** cannot be ignored in post-trauma intervention. Managers are responsible for promoting the well-being of their employees as it relates to their work. When a crisis happens in a paramedic service – a paramedic suicide, for example – the organization will often have a predefined plan for providing social and practical support for those closely affected, such as contacting people who should be informed, setting up a

reception centre, aiding with funeral arrangements, creating a book of condolences, etc. Psychological support may be considered as part the response to the crisis, at least in the form of providing information about accessing support services and the normal symptoms of psychological trauma. Front-line supervisors may be in a key position to promote wellbeing, and if so, the organization needs to make them aware of their responsibility to convey information about what services are available and/or to communicate with psychological support services.

Alternative support: Organizations may consider alternative mental health services as well as spiritual support (Dewey 2011). Some people will reject traditional medicalized approaches to mental health. Others may find that the traditional approaches do not work as well as alternative and/or holistic approaches. The idea is to give people options and allow them to choose their path toward psychological wellness.

Prevention

Training, awareness

Awareness-level training: Partnering with continuing education services allows broad access to the frontline staff where the service can provide awareness training of all new recruits. Sensitization and awareness about operational stress may be provided to supervisors and higher level managers in an effort to build an organizational response.

Resiliency training: Within the past decade, there has been a move to look for ways to teach people how to bounce back from adversity. Halpern et al. suggest that educating paramedic service personnel in how to recognize and how to tolerate vulnerable feelings generated by critical incidents may help people to overcome feelings of inability to help and intense compassion (Halpern 2009). Toronto EMS produced a booklet called "Building Resiliency" in 2007, which discussed tools and tactics for personally negotiating stressful times (Goldberg 2007). In 2010, the National Association of Emergency Medical Technicians printed a series of informative articles on stress and paramedics. Part of the series included a "resiliency toolbox" for paramedics written by two psychologists. With advice on behaviours related to exercise, sleep, and diet, as well as cognitive resiliency, the toolbox could be seen as tips for better living and is characterised by the series author as a holistic approach to stress management (Grill 2010).

Much of the resiliency work rests on the idea that optimism is linked to increased resilience, and that optimism can be taught. Since 2009, the American military has been investigating how training in mental toughness could help relieve psychological issues among soldiers. Their program rests on mandatory instruction in psychological fortitude through training modules that encourage soldiers to analyse personally-held beliefs about failure in what the Army Medical Department and the psychologists at the University of Pennsylvania responsible for the approach call "positive psychology" (Army Medical Department 2014). While the U.S. Army claims that resiliency training is showing signs of efficacy, others critique both the method and how it has been implemented (Eidelson 2012).

This new approach promotes the idea that, with a commitment to a positive outlook, personal growth and learning can result from adversity. Interestingly, the concept that personal growth may be one of the results of operational stress injury has entered the public discussion. A 2012 New York Times piece, for example, examines what is termed post-traumatic growth (Rendon 2012).

Paramedic attributes: While the social, cultural and personality traits of paramedics are not well understood, it is possible that individual differences account for some measure of paramedic service personnel response to operational stress (Halpern 2011). Pajonk et al. compared personality traits between emergency physicians and paramedics (Frank-Gerald Pajonk 2010). The study suggested that personality is not homogenous among these groups, but that certain subgroups may have personality characteristics that predispose them to develop disorders associated with psychological distress. It may be that paramedics develop certain attributes through their training and work, or conversely that the type of occupation attracts people with certain personalities.

Using paramedic personality profiles to inform operational stress responses is an approach that should be taken with caution. Even if we did have an accepted profile of paramedic service personnel, and even if we understood the relations between the occupation and personality, this approach risks ignoring the actual everyday context within which these people work. If we measure fear, anxiety, fulfillment, hope, and other markers of psychological wellbeing among paramedic service personnel, it is to understand the subjective reality of paramedics and emergency medical responders and not to reduce them to these feelings. The risk for paramedic services is that we go on to treat operational stress as a personal problem embedded in profiles of those who work in these services, while ignoring both structural aspects of the work and its subjective qualities experienced by our personnel.

Risk-reduction: through an organisational audit, paramedic services may determine places where changes could improve feelings of safety, security and control as well as identify key stressors in order to find ways to mitigate them or their effects.

Conclusion

Across the country, we see that paramedic services are conscious of the need to provide responses to operational stress for our employees. At the macro-organizational level, service-based champions of operational stress responses are advocating for strategies that mitigate stress and favour psychological wellness. If paramedic services aim to assess and improve our programming addressing operational stress, the current opportunities centre around the concept of building more comprehensive operational stress responses, which seem to best coalesce with workplace strategies on psychological health. Specifically, the "comprehensive" concept here includes two broad approaches already in use within Canadian paramedic services at the forefront of this issue: strategies that target the individual at risk of injury and strategies that target organizational relations (Shain 2004). These two dimensions cut across the four elements of successful strategy, which we have suggested here are comprehension, prevention, intervention and treatment of operational stress injury.

Strategies targeting the individual are premised on psychosocial support and training. Examples implemented in some services include awareness training, resiliency training, peer support teams, psychological counselling services (organized or facilitated in-house), spiritual counselling, and telephone response lines. Employee Assistance Programs are well-established in the services represented on the Adhoc Committee, with short-term counselling offered not only to the staff but in many services also available to the families of employees. These EFAPs also tend to offer psychological intervention, often coordinated through the Human Resources department though some services coordinate this in other administrative units.

Organisations are working to understand the amplitude of stress injuries and their presentations as well as to examine workplace stressors for front-line staff. Improving work processes and considering operational, human resource and policy changes that improve feelings of safety, security and control among staff are strategies that our paramedic services are using to mitigate operational stress.

When combined with a strong peer-based team, centralized coordination of psychological support programming appears to offer an important critical mass of interested, knowledgeable people who can advocate, educate, support others and build services. The coherence that this approach offers the paramedic service in terms of a packaged program seems to be matched by the employees' acceptance and appreciation of this type of accessible, responsive operational stress injury response.

Appendix 1: Resources

In addition to examining the psychological support services and programs we are building in Canadian paramedic services, it may be pertinent to review the issues and responses developed elsewhere in developing or revamping services. Here, we present a listing of other programs and tools that may be considered as resources for building operational stress injury responses. They are available in French as well as in English unless otherwise noted.

- Bureau de Normalisation du Québec, the Canadian Standards Association and the Mental Health Commission of Canada – Psychological health and safety in the workplace - Prevention, promotion, and guidance to staged implementation: http://shop.csa.ca/en/canada/occupational-health-and-safety-management/canrsa-z1003-13bnq-9700-8032013/inv/z10032013/?utm_source=redirect&utm_medium=vanity&utm_content=folder&utm_campaign=z1003 and Frequently Asked Questions - The National Standard of Canada titled Psychological Health and Safety in the Workplace – Prevention, promotion and guidance to staged implementation: http://www.mentalhealthcommission.ca/English/system/files/private/document/MHCC_Standard_FAQ_ENG-1.pdf?terminal=37
- Canadian Critical Incident Stress Foundation : <http://www.ccisf.info/default.html>
- Coastal Crisis Chaplaincy: providing pastoral care and counselling for employees and families of first responders. <http://coastalcrisischaplain.org> (English only)
- Defence Canada, Surgeon General's Mental Health Strategy: An Evolution of Excellence, 2013, Government of Canada: Ottawa.
- Great-West Life Centre for Mental Health in the Workplace - Psychological Health and Safety Management System: <http://www.workplacestrategiesformentalhealth.com/display.asp?I1=236&d=236>
- Great West Life and the [Centre for Applied Research in Mental Health and Addiction \(CARMHA\)](#) - Guarding Minds at Work – free resources for evaluation of workplace mental health: <http://www.guardingmindsatwork.ca/info>
- International Critical Incident Stress Foundation: <http://www.icisf.org> (English only)
- Mental Health Commission of Canada, A Leadership Framework for Advancing Workplace Mental Health. This website will quickly take you through the business case for creating a mentally healthy workplace. <http://www.mhccleadership.ca>
- Royal Canadian Mounted Police – Mental health services available to RCMP members: <http://www.rcmp-grc.gc.ca/fam/ptsd-tspt-eng.htm>
- Veterans Affairs Canada – OSI Connect Mobile App: <http://www.veterans.gc.ca/eng/mental-health/osi/osi-app>
- Veterans Affairs Canada – OSI Clinics: <http://www.veterans.gc.ca/eng/mental-health/osi-network>

Appendix 2: Psychological Support Services by Paramedic Service

These are the organisations represented on the Ad-hoc committee as well as those consulted for this report. The governance and service-provision structures of each organization are briefly mentioned, followed by highlights of the organization's current psychological support services, if available.

Island EMS

Private service operator serving primarily rural provincial population

Ambulance New Brunswick

Provincial government branch managed via a contract to a single private service provider, New Brunswick EMS Inc. to administer the province wide EMS service; serves primarily rural and some urban populations

- NB has a CISM program through the health department (peer program)
- NB provides defusing (peer), followed by debriefing when needed with the assistance of mental health provider (MHP)
- NB also has an Employee Assistance Program (EAP), with some extended health benefits coverage for private services
- Worksafe (workers' compensation board) has a no-lost-time option for people who want to continue working

Urgences-santé

Provincial non-profit governmental corporation administering and providing paramedic services; reports to the Minister of Health and Social Services; serves primarily urban and sub-urban population of 2.4 million in Montreal and Laval

- An academic group conducted the last major assessment of psychological needs, specifically as they related to suicide, at Urgences-santé in 2005
- Urgences-santé has an EAP with services provided to families as well
- US has some extended health benefits coverage for private services
- US depends highly on field supervisors to identify employees needing support and to do defusing
- US has a CISD program providing debriefing through the EAP provider, which is coordinated by the Human Resources department
- US trained all staff in psychological stress awareness
- Managers received specific mental health training

Toronto Emergency Medical Services (TEMS)

Municipal non-profit organisation that serves primarily urban and sub-urban Toronto population of 3.5 million

- TEMS program was redeveloped in 2012/2013 based on a needs assessment in which 100% of paramedics and dispatchers participated
- TEMS has a full-time in-house EMS psychologist (Dr. Lori Gray) who coordinates psychosocial support services
- TEMS has a peer support program, two EAPs, extended health benefits, and external referral network for community based resources (e.g., mental health providers, residential treatment centres, drug and alcohol rehabilitation centres, family counsellors, financial and legal resources).
- TEMS adopted a proactive/wellness program focused on preventative outreach, early intervention, assessment, and expedited access into best practices treatment. The program includes educational programming and consultation.
- The Peer Resource Team (PRT) includes both paramedics and dispatchers, which address the spectrum of critical incidents, cumulative stress, and other workplace and personal matters.
- As part of the redevelopment of psychological support programs, the PRT now has a standardized selection process (e.g., peer nomination, interview, and psychological screening), standardized training, quality assurance monitoring, zero-tolerance policy on breaches of confidentiality, and burnout prevention
- Psychologist and PRT are on-call 24/7 for critical incidents and crises
- Overall focus are operational stress injuries (which include but are not limited to acute stress, posttraumatic stress, depression, alcohol and substance use) as well as other stressors that might impact paramedics personally or professionally
- 2012 stats – approx 430 first time calls for support to the staff psychologist, 1200 first time calls to the peer support team, over 3000 check-ins.

Niagara Emergency Medical Services (NEMS)

Municipal non-profit organisation that serves mixed urban and rural population of 431,346.

NEMS currently has an EAP and a peer CISM team

NEMS is currently undergoing a comprehensive redevelopment of its psychological support program to include:

- Initial (baseline) and ongoing measurement of staff psychological health to help monitor effects of program implementation and changes
- Enhanced selection process for Peer Support Team (CISM)
- Education for all staff on PTSD and job related stress, both acute and chronic, as well as education for all staff on suicide awareness (safeTALK)
- 'Respectful workplace' with conflict resolution processes and zero tolerance for harassment/bullying (reinforced with education and policy)
- Additional education for supervisors, management and peer counselors in psychological first aid
- Access to robust employee assistance programs
- Education for spouses/families of EMS staff on the impact of job-related stress and warning signs, as well as access to help
- Incorporation of professional psychological support for input into program development and maintenance
- Investigate availability of spiritual counseling for those that might find it useful (i.e. 'chaplain')
- Empowerment of staff to request 'down time', and Supervisors to approve same, to provide 'cooling off' periods after stressful calls

- Proactive 'flagging' of potential at-risk staff based on high-stress call type or volume (for example, numerous high acuity calls in a short time period, or calls involving critical pediatric/obstetrical patients, violence or threats)
- Investigation of shift patterns that better promote work wellness
- Practices that ensure work-life balance such as on-time meal breaks and minimal end-of-shift overtime
- Enhanced processes to better accommodate staff afflicted with mental illness including PTSD

Regina-Qu'Appelle Health Region EMS (RQHR-EMS)

Provincial government regional branch with some direct provision of service as well as administration of EMS via several private paramedic services in the region

- RQHR-EMS is a mixture of private contracted services and region based services.
- RQHR-EMS has an EAP but not a CISM team
- The previous CISM team was disbanded by the region in favor of the EAP. Recently, there have been concerns regarding the EAP's ability to service the special needs of EMS.
- The current culture is focused on the momentum of establishing support services
- RQHR-EMS is looking toward a peer support program and educational programming

Alberta Health Services EMS

Provincial government branch administering province-wide urban, sub-urban, and rural private paramedic services in 5 operational zones

- In June 2012, a provincial psychological support system was launched
- ABEMS has a fulltime CISM coordinator (Careen Condrotte)
- Rural vs. urban zones pose a challenge in structuring and delivering services
- Provincial is zone-specific – platoon based peer support for the metro areas whereas the rural regions call in support when needed to that area
- ABEMS offers a comprehensive pre-incident to post-incident intervention program
- Educational programming is provided as part of the standard orientation process (provided by the peer support team, Careen, and the EAP)
- ABEMS has a referral network to direct staff to trauma-specialized clinicians outside their system when needed
- ABEMS is linking up with workplace health and safety (WCB) to assist in prevention, identification, and management of cases
- ABEMS has presumptive legislation for first responders suffering from PTSD
- Bill #1 – for first responders to receive treatment for PTSD, but there has been some concern as this bill excluded dispatchers

British Columbia Emergency Health Service (BCEHS)

A Provincial government branch administering province-wide urban, sub-urban, and rural private paramedic services through the BC Ambulance Service (BCAS).

- BCAS is currently reviewing employee mental health services.
- BCAS provides a full EFAP program to all staff and their families.
- BCAS has a peer-based team who provide Critical Incident Stress defusing.
- An Employee Health Survey is currently being administered; this will assess the physical and mental health needs of employees in order to implement of programs, services and tools to address these needs.



Operational Stress Injury in Paramedic Services

A Briefing to the Paramedic Chiefs of Canada

- Peers select the members of the peer team, with the union coordinating the selection process.
- Debriefings are done by the EFAP provider on an as-needed basis.
- Under the Workplace Health team, the Provincial Health Service Authority Health Promotion program has many mental health supports that will soon be available to BCAS employees.

Appendix 3: GHQ-12

General Health Questionnaire - English version follows

Toutes les questions suivantes concernent votre état de santé actuel ou récent.

Les 12 questions suivantes peuvent vous surprendre dans leurs formulations, mais elles font partie d'un questionnaire international étalonné et validé, le General Health Questionnaire dans sa version française de 12 items (GHQ12). Il est important de répondre A TOUTES LES QUESTIONS en cochant la réponse qui vous semble le mieux correspondre à ce que vous ressentez actuellement, DANS LA VIE DE TOUS LES JOURS AU TRAVAIL. (Ce questionnaire porte donc sur le stress au travail).

CES DERNIERS TEMPS :

1. Avez-vous pu vous concentrer sur ce que vous faisiez au travail ?

- 1. Mieux que d'habitude.
- 2. Comme d'habitude.
- 3. Moins que d'habitude.
- 4. Beaucoup moins que d'habitude.

2. Vos soucis au travail vous ont-ils empêché de dormir ?

- 1. Pas du tout.
- 2. Pas plus que d'habitude.
- 3. Plutôt plus que d'habitude.
- 4. Beaucoup plus que d'habitude.

3. Avez-vous eu le sentiment de jouer un rôle utile au travail ?

- 1. Plutôt plus que d'habitude.
- 2. Comme d'habitude.
- 3. Moins utile que d'habitude.
- 4. Beaucoup moins utile.

4. Vous êtes vous senti capable de prendre des décisions au travail ?

- 1. Plutôt plus que d'habitude.
- 2. Comme d'habitude.
- 3. Plutôt moins que d'habitude.

4. Beaucoup moins capable.
5. Vous êtes vous senti constamment sous pression au travail ?
1. Pas du tout.
2. Pas plus que d'habitude.
3. Un peu plus que d'habitude.
4. Beaucoup plus que d'habitude.
6. Avez-vous senti que vous ne pouviez pas surmonter vos difficultés au travail ?
1. Pas du tout.
2. Pas plus que d'habitude.
3. Un peu plus que d'habitude.
4. Beaucoup plus que d'habitude.
7. Avez-vous pu prendre plaisir à vos activités quotidiennes au travail?
1. Plutôt plus que d'habitude.
2. Comme d'habitude.
3. Plutôt moins que d'habitude.
4. Beaucoup moins que d'habitude.
- Tourner S.V.P.
8. Avez-vous pu faire face à vos problèmes au travail ?
1. Plutôt plus que d'habitude.
2. Comme d'habitude.
3. Moins capable que d'habitude.
4. Beaucoup moins capable.
9. Vous êtes-vous senti malheureux, déprimé au travail ?
1. Pas du tout.
2. Pas plus que d'habitude.
3. Un peu plus que d'habitude.
4. Beaucoup plus que d'habitude.

10. Avez-vous perdu confiance en vous au travail ?

- 1. Pas du tout.
- 2. Pas plus que d'habitude.
- 3. Un peu plus que d'habitude.
- 4. Beaucoup plus que d'habitude.

11. Avez-vous pensé que vous ne valez rien au travail ?

- 1. Pas du tout.
- 2. Pas plus que d'habitude.
- 3. Un peu plus que d'habitude.
- 4. Beaucoup plus que d'habitude.

12. Vous êtes-vous senti relativement heureux dans l'ensemble au travail ?

- 1. Plutôt plus que d'habitude.
- 2. A peu près comme d'habitude.
- 3. Plutôt moins que d'habitude.
- 4. Beaucoup moins que d'habitude.

CALCUL DES SCORES

Deux options

0-1

Les valeurs 1 et 2 sont recodées en 0

Les valeurs 3 et 4 sont recodées en 1

Un score supérieur ou égal à 2 correspondrait à un trouble psychiatrique

Likert

Échelle Likert de 0, 1, 2, 3 de haut en bas.

12 items, 0 à 3 chacun

Variation des scores entre 0 et 36.

Score =11-12 typique.

Score >15 évidence de détresse

Score >20 suggestion d'un problème sévère et stresse psychologique

General Health Questionnaire

We want to know how your health has been at work over the last few weeks.

Please read the questions below and each of the four possible answers. Circle the response that best applies to you. Thank you for answering all the questions.

Have you recently:

1. been able to concentrate on what you're doing at work?

- 1. Better than usual.
- 2. Same as usual.
- 3. Less than usual.
- 4. Much less than usual.

2. lost much sleep over worry at work?

- 1. Not at all.
- 2. No more than usual.
- 3. Rather more than usual.
- 4. Much more than usual.

3. felt that you are playing a useful part in things at work?

- 1. More so than usual.
- 2. Same as usual.
- 3. Less so than usual.
- 4. Much less than usual.

4. felt capable of making decisions about things at work?

- 1. More so than usual.
- 2. Same as usual.
- 3. Less so than usual.
- 4. Much less than usual.

5. felt constantly under strain at work?
- 1. Not at all.
 - 2. No more than usual.
 - 3. Rather more than usual.
 - 4. Much more than usual.
6. felt you couldn't overcome your difficulties at work?
- 1. Not at all.
 - 2. No more than usual.
 - 3. Rather more than usual.
 - 4. Much more than usual.
7. been able to enjoy your normal day to day activities at work?
- 1. More so than usual.
 - 2. Same as usual.
 - 3. Less so than usual.
 - 4. Much less than usual.
8. been able to face up to your problems at work?
- 1. More so than usual.
 - 2. Same as usual.
 - 3. Less so than usual.
 - 4. Much less than usual.
9. been feeling unhappy or depressed at work?
- 1. Not at all.
 - 2. No more than usual.
 - 3. Rather more than usual.
 - 4. Much more than usual.

10. been losing confidence in yourself at work?
- 1. Not at all.
 - 2. No more than usual.
 - 3. Rather more than usual.
 - 4. Much more than usual.
11. been thinking of yourself as a worthless person at work?
- 1. Not at all.
 - 2. No more than usual.
 - 3. Rather more than usual.
 - 4. Much more than usual.
12. been feeling reasonably happy at work, all things considered?
- 1. More so than usual.
 - 2. Same as usual.
 - 3. Less so than usual.
 - 4. Much less than usual.

Scoring: Two options

0-1

Recode 1 and 2 as 0

Recode 3 and 4 as 1

A score equal to or greater than 2 suggests psychological distress.

Likert

Apply a Likert scale of 0, 1, 2, 3 from top to bottom.

12 items, 0 to 3 each item.

Score range 0 to 36.

Scores about 11-12 typical.

Score >15 evidence of distress

Score >20 suggests severe problems and psychological distress

Appendix 4: CISM Core Components

(Adapted from Everly and Mitchell, 1999)

INTERVENTION	TIMING	ACTIVATION	GOAL	FORMAT
1. Pre-crisis preparation	Pre-crisis phase	Crisis anticipation	<ul style="list-style-type: none"> Set expectations Improve coping Stress management 	<ul style="list-style-type: none"> Education Groups/organization Length of time – 1-2 hours
2. Demobilization & staff consultation	Shift Disengagement	Event Driven (e.g. disaster)	<ul style="list-style-type: none"> Inform and consult Allow psychological decompression Stress management 	<ul style="list-style-type: none"> Large groups/organization Usually first responder groups Length of time – 15-20 minutes after shift
3. Crisis Management Briefing (CMB)	Anytime post-crisis	Usually symptom driven May be event driven (e.g. community tragedy)	<ul style="list-style-type: none"> Inform and consult Allow psychological decompression Stress management Grief Education 	<ul style="list-style-type: none"> Large groups/organization May include secondary victims Length of time – 30 minutes – 2 hours
4. Defusing	Post-crisis Within 12 hours	Usually symptom driven	<ul style="list-style-type: none"> Symptom mitigation Possible closure Stress management Triage May be followed by CISD 	<ul style="list-style-type: none"> Small groups – usually first responders Homogeneous groups Do not include civilians with first responders
5. Critical Incident Stress Debriefing (CISD) Note: Special circumstances (e.g. multiple events, Line of Duty Death, etc.) may require different model and timing.	Post-crisis (Optimal – 48-72 hours; 3-4 weeks for disasters)	Usually symptom driven Can be event driven	<ul style="list-style-type: none"> Facilitate psychological closure Symptom mitigation Stress management Triage 	<ul style="list-style-type: none"> Small groups – usually first responders Homogeneous groups Do not include civilians with first responders
6. Individual Intervention (1:1) – Telephone/In Person	Anywhere Anytime	Symptom driven	<ul style="list-style-type: none"> Symptom mitigation Return to function, if possible Referral, if needed 	<ul style="list-style-type: none"> Individuals
7. Family CISM	Anytime	Either symptom driven or event driven	<ul style="list-style-type: none"> Foster support & communication Symptom mitigation Closure if possible Referral, if needed 	<ul style="list-style-type: none"> Families
8. Community and Organization Consultation Note: This response may involve other partners & requires a collaborative approach)	Anytime	Either symptom driven or event driven	<ul style="list-style-type: none"> Foster support & communication Symptom mitigation Closure if possible Referral, if needed 	<ul style="list-style-type: none"> Organizations



Paramedic Chiefs
of Canada
Chefs Paramédics
du Canada

Operational Stress Injury in Paramedic Services

A Briefing to the Paramedic Chiefs of Canada

9. Pastoral Crisis Intervention	Anytime	Usually symptom driven	<ul style="list-style-type: none">• To mitigate a "crisis of faith"	<ul style="list-style-type: none">• Individuals• Groups• Families
10. Follow-up/Referral	Anytime	Usually symptom driven	<ul style="list-style-type: none">• Assess mental status• Access higher level of care if needed	<ul style="list-style-type: none">• Individuals• Groups• Families• After other interventions

References

- Adams, Barbara D., Samantha A. Davis, Andrea L. Brown, Emily-Ana Filardo, Michael H. Thomson
2013 Post-traumatic Stress Disorder (PTSD) in Emergency Responders Scoping Study: Literature Review Contract Report, Department of National Defence, D.r.a.d. Canada. Army Medical Department, U.S.
- 2014 Resilience Training, Vol. 2014.
- Bennett, P., Y. Williams, N. Page, K. Hood, M. Woollard
2004 Levels of mental health problems among UK emergency ambulance workers. *Emergency Medical Journal* 21:235-236.
- Bureau de Normalisation du Québec, Canadian Standards Association, Mental Health Commission of Canada
2013 Psychological health and safety in the workplace - Prevention, promotion, and guidance to staged implementation, Vol. CAN/CSA-Z1003-13/BNQ 9700-803/2013. Canada, Mental Health Commission of
- 2013 A Leadership Framework for Advancing Workplace Mental Health, Vol. 2014.
- 2014a MHCC, Canadian Employers Launch Research Project for Workplace Mental Health, Vol. 2014.
- 2014b National Standard Homepage, Vol. 2014.
- Dewey, Rob
2011 Chaplaincy provides spiritual support in critical stress management. *NAEMT News Spring*.
- Donnelly, Elizabeth, Paul Bradford, Randy Mellow, Cathie Hedges, Peter Morassutti
2013 Relative Influence of Different Stresses on PTSD in a Canadian EMS Service (abstract). *Prehospital Emergency Care* 17(1).
- Dyregrov, A.
1997 The process in psychological debriefings. *Journal of Trauma Stress* (10):589-605.
- Eidelson, Roy, Stephen Soldz
2012 Does Comprehensive Soldier Fitness Work? CSF Research Fails the Test Coalition for an Ethical Psychology.
- Fjeldheim, Celine B., Jani Nöthling, Karin Pretorius, Marina Basson, Keith Ganasen, Robin Heneke, Karen J. Cloete, Soraya Seedat
2014 Trauma exposure, posttraumatic stress disorder and the effect of explanatory variables in paramedic trainees. *BMC Emergency Medicine* 14(11).
- Frank-Gerald Pajonk, Burghard Andresen, Thomas Schneider-Axmann, Alexander Teichmann, Ulf Gartner, Jurgen Lubda, Heinzpeter Poecke, Georg von Knobelsdorff
2010 Personality Traits of Emergency Physicians and Paramedics. *Emergency Medicine Journal*.
- Goldberg, Gerry

- 2007 Building Resiliency: EMS Stress and the Peer Support Team. Toronto: Toronto Emergency Medical Services.
- Grill, Michel T.
2010 Resiliency Training Can Help you Cope on the Job. NAEMT News Fall.
- Gurevich, Maria, Janice Halpern, Paulette Brazeau, Piera S. Defina, Brian Schwartz
2009 Frontline Stress Behind the Scenes: Emergency Medical Dispatchers. Ryerson University, D.o. Psychology.
- Halpern, Janice, Maria Gurevich, Brian Schwartz, Paulette Brazeau
2009 What makes an incident critical for ambulance workers? Emotional outcomes and implications for intervention. *Work & Stress* 23(2):173-189.
- Halpern, Janice, Robert G. Maunder, Brian Schwartz, Maria Gurevich
2011 Attachment Insecurity, Responses to Critical Incident Distress, and Current Emotional Symptoms in Ambulance Workers. *Stress Health*.
- Hegg-Deloye, Sandrine, Patrice Brassard, Nathalie Jauvin, Jérôme Prairie, Dominique Larouche, Paul Poirier, Angelo Tremblay, Philippe Corbeil
2014 Current state of knowledge of post-traumatic stress, sleeping problems, obesity and cardiovascular disease in paramedics. *Emergency Medical Journal* 31:242-247.
- Kleim, Birgit, Maren Westphal
2011 Mental Health in First Responders: A Review and Recommendation for Prevention and Intervention Strategies. *Traumatology* 17(4):17-24.
- Lesage, Francois-Xavier
2014 GHQW-12. C. Vacon, ed. Urgences-santé.
- Lesage, Francois-Xavier, Sonia Martens-Resende, Frédéric Deschamps, Sophie Berjot
2011 Validation of the General Health Questionnaire (GHQ-12) adapted to a work-related context *Open Journal of Preventive Medicine* 1(2):44-48.
- Meighen, Michael, John Wiebe
2003 Occupational Stress Injuries: The Need for Understanding. Senate of Canada, S.S.C.o.N.S.a. Defence.
- Mitchell, JT.
1988 The history, status and future of critical incident stress debriefings. *JEMS*:47-51.
- Practice, BMJ Best
2014 Critical incident stress management. *BMJ Best Practice*.
- Publishing, American Psychiatric
2013 Posttraumatic Stress Disorder. A.P. Association, ed. Pp. 2.
- Regal, S.
2007 Post-trauma support in the workplace: the current status and practice of critical incident stress management (CISM) and psychological debriefing (PD) within organizations in the UK
Occupational Medicine (57):411-416.
- Rendon, Jim
2012 Post-Traumatic Stress's Surprisingly Positive Flip Side. *New York Times*, March 22, 2012.
- Robinson, Robyn
2002 Follow-up Study of Health and Stress in Ambulance Services of Victoria, Australia: Report 1 Paramedics and their Partners. Victorian Ambulance Crisis Counselling Unit.

Shain, M., D.M. Kramer

2004 Health Promotion in the Workplace: Framing the Concept; Reviewing the Evidence. *Occupational and Environmental Medicine* 61:643-648.

Suzanne Rose, Jonathan Bisson, Rachel Churchill, Simon Wessely

2009 Psychological debriefing for preventing post traumatic stress disorder (PTSD) (Review). *The Cochrane Library* (1).

Tehrani, Noreen

2004 *Workplace Trauma: Concepts, Assessment and Interventions*. New York: Brunner-Routledge.

Tuckey, Michelle R.

2007 *Issues in the Debriefing Debate for the Emergency Services; Moving Research Outcomes Forward*. University of South Australia, W.S.R. Group.

Tuckey, Michelle R., Jill E. Scott

2013 Group critical incident stress debriefing with emergency services personnel: a randomized controlled trial. *Anxiety, Stress & Coping* 2013.

Van Ameringen, M., C. Mancini, B. Patterson, M.H. Boyle

2008 Post-traumatic stress disorder in Canada. *CNS Neuroscience & Therapeutics* 14(3):171-181.