

**[CARLETON]** *Pan Canadian Public Safety Personnel: Ongoing Knowledge Translation and Strategic Development*

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**Priority Research Area: N/A**

**Relevant PSP Population(s):** Police (municipal, provincial, RCMP)  
Correctional workers (federal, provincial)  
Firefighters  
Paramedics  
Call centre operators/dispatchers

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**What is the issue?** In 2016/17, the first wide-scale, pan-Canadian survey of Public Safety Personnel (PSP) was conducted. Of the 8,520 PSP who began the survey, 4,772 completed the survey—informally known as "AX1"—in its entirety. Participants represented multiple sectors (municipal/provincial police, RCMP, paramedics, firefighters, corrections workers, and call centre operators/dispatchers). Included in this substantial dataset are variables pertaining to: demographics, mental health symptoms (e.g., depression, anxiety, posttraumatic stress), substance use, work experiences (e.g., operational stress, supports, stigma), interpersonal relationships, and personality (e.g., risk and resiliency variables). This provided a wealth of data left to be analyzed and reported beyond the initial publications.

**What was the aim of the study?** The primary aim of this project was to produce 8-10 additional peer-reviewed papers from the extensive AX1 dataset over the course of the 1-year funding period. This allowed for in-depth examination of the relationships among numerous demographic, mental health, personality, organizational, and interpersonal variables, both broadly and within specific PSP sectors. This facilitated creation of a more comprehensive knowledge base pertaining to the symptoms of mental health injuries across and within numerous PSP sectors, as well as further identification of risk and resiliency variables. The Catalyst Grant extended the value of the initial support obtained for the AX1 data collection considerably by allowing for production of a more substantial body of literature, all available as open-access, to both broaden and deepen the current knowledge base regarding PSP mental health in Canada.

**How was the study conducted?** The study consisted of a series of retrospective analyses of data from the AX1 dataset. Members of the study team worked to identify knowledge gaps in the literature, and areas of particular interest were identified through engagement with PSP knowledge users and stakeholders across multiple sectors. A series of statistical and qualitative analyses were conducted as appropriate to each particular sub-study's research questions.

**What did the study find?** The following are some of the major outcomes reported in individual publications that arose from the extensive analyses of the AX1 dataset:

- (1) Despite being identified as risk factors for mental disorders, levels of intolerance of uncertainty (IU) and anxiety sensitivity (AS) were low in PSP as compared to general clinical samples, regardless of the presence or absence of signs of mental disorders.
- (2) PSP with previous military experience were more likely to screen positive for mental disorders than those with

no service history with the armed forces.

(3) PSP who screened positive for insomnia were 3.43–6.96 times more likely to screen positive for a mental disorder. The lowest levels of sleep disturbance were found among firefighters and municipal/provincial police.

(4) The prevalence of mental health challenges for provincial correctional workers appears to be higher than in federal correctional workers in Canada.

(5) Comparing PSP groups, correctional workers reported the most mental health knowledge, least stigma, highest intentions to use mental health services, and the highest positive screens for mental disorders, whereas the opposite was true for firefighters.

**What are the implications of this study?** The initial goal of producing an additional 8-10 peer-reviewed publications from the AX1 dataset has already been exceeded, which has extended the knowledge base about PSP mental health in Canada. Manuscripts pertaining to a wide variety of topics have been published, including but not limited to: differences in sleep quality and its association with PSP mental health; differences among PSP sectors in mental health knowledge, attitudes, stigma, and help-seeking behaviours; prior military service as a predictor of mental health symptoms among PSP; PSP perceptions of “fitness to work;” and associations between trauma exposure and physical conditions experienced by PSP.

**What are the key messages?** Collectively, the additional findings that have been produced from the AX1 dataset as a result of this Catalyst Grant have demonstrated that there remains considerable untapped knowledge about risk and resiliency factors in PSP mental health. Disparities were also noted among PSP professions with regard to numerous mental health outcome and predictor variables, some of which were unexpected, suggesting that there is still much more research that needs to be done in this area. The findings also point to areas for further research with regard to addressing the unique mental health needs of different PSP groups.

**Provide a list of potential target audiences for this research:** PSP, particularly: municipal/provincial police, RCMP, provincial/federal corrections workers; call centre operators/dispatchers; paramedics, firefighters  
Active military and military veterans  
Senior PSP leadership and policy-makers  
Clinical psychologists  
Researchers in psychology/mental health

**[SINDEN]:** Identifying the impact of formal and informal critical incident interventions on firefighters’ exposure to post-traumatic stress injury in a Northwestern Ontario fire service

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**Priority Research Area:** Mental health management

**Relevant PSP Population(s):** Career firefighters

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**What is the issue?** Firefighters are exposed to various factors associated with an increased risk of post-traumatic stress injury (PTSI) including exposure to critical incidents. Critical incident stress debriefing (CISD) is a common strategy used by fire services to manage calls with high critical incident exposure however, recent evidence suggested that CISD may be more harmful than helpful.

Various strategies including Road-to-Mental Readiness, CISD and informal strategies have been implemented as part of the TBFR firefighter mental health management program however, components with perceived effectiveness are unknown.

**What was the aim of the study?** The foundational research question was: What are the preferred, effective components that should be maintained in the

TBFR / TBPFFA Critical Incident Stress Management program?

The following specific research objectives were developed in response to the overarching research question:

1. To identify the burden of critical event exposures and the incidence of PTSI among Thunder Bay Fire Rescue firefighters.
2. To identify Thunder Bay Fire Rescue firefighters' experiences with Defusing compared to Informal Strategies (i.e., Road to Mental Readiness, informal crew debriefings) following critical incident exposure.
3. To identify the impact of delivering components of the Critical Incident Stress Debriefing (CISD) program, with a specific focus on Defusing on the Thunder Bay Fire Rescue Critical Incident Response Team (CIRT) members.
4. To report on identified current best-practices and outline next steps regarding new resources and/or modification to existing strategies

**How was the study conducted?** Quantitative data collection included administration of a series of questionnaires that determined critical incident exposure, post-traumatic stress injury risk and components of the mental health management program that firefighters preferred and accessed following critical incident exposure. Qualitative interviews were conducted to determine impacts of delivering components of the CISD on CIRT members. Follow-up meetings with management and union representation as well, written communications (i.e., infographics) were developed to facilitate communication of initial study findings.

**What did the study find?** The following are preliminary results:

Thunder Bay Fire Rescue (TBFR) firefighters (n=143) who volunteered to participate in the study had a mean age of 40 years and 11.5 years of service. 91% of TBFR firefighters reported experiencing at least 1 (median = 7) critical incident within the two months prior to data collection (December 2019) and 86% of the same sample reported experiencing symptoms of post-traumatic stress injury. When PTSI risk was stratified, 20% of firefighters reported symptoms that placed them in the moderate to high risk category. 10.6% of our participant sample used formal critical incident stress management resources (i.e., CIRT and defusing) however the majority of firefighters indicated a preference for informal / crew discussions following a critical event exposure. Qualitative analysis is ongoing however emerging themes

suggest that CIRT members perceive that the formal CIRT response impacts the natural informal discussions that occur within the crew. Furthermore, CIRT members feel unprepared to respond to many of the individual firefighter distress calls. CIRT members are often called to respond while off duty and this responsibility places a high burden on CIRT members and their families. There was an overwhelming call by CIRT for formal resources to support firefighter mental health.

**What are the implications of this study?** Evidence-based strategies are required to manage the high exposure and post-traumatic stress injury response among Thunder Bay Fire Rescue firefighters.

Thunder Bay Fire Rescue firefighters appear to prefer informal strategies to manage critical incident exposure; effectiveness compared to formal, evidence-based solutions is warranted.

CIRT implementation would benefit from review and provision of additional mental health supports for CIRT

**What are the key messages?** Thunder Bay Fire Rescue firefighters experience high critical incident exposures.

Although risk of post-traumatic stress injury is high, this is self-reported and because of the culture among first responders, particularly firefighting, this risk may be higher.

Although some Thunder Bay Fire Rescue firefighters have utilized formal strategies to manage critical incident exposures, there is a preference towards utilizing informal strategies and crew discussions following a difficult call.

Empirical evidence supporting this approach compared to evidence-based approaches for managing mood disorders including post-traumatic stress is required.

Thunder Bay Fire Rescue CIRT members require additional supports, both operational and for their own mental health, if this program is to continue.

**Provide a list of potential target audiences for this research:** Firefighters, Fire Chiefs, Union, Mental health professionals, Researchers

**[GEOFFRION]** - *Psychological first aid to prevent post-traumatic stress injuries among recently exposed emergency medical technicians: can it work?*

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**Priority Research Area:** Prevention, including measures, programs and interventions aimed at limiting the number of new PTSD cases among PSP

**Relevant PSP Population(s):** All, but especially emergency medical technicians (EMTs)

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**What is the issue?** Effective post-immediate interventions aimed at preventing PTSD among EMTs (and other public safety personnel) are still lacking in Canada and around the world. Many health organizations and international experts on PTSD now recommend offering Psychological First Aid (PFA), an evidence-informed early intervention approach, to prevent PTSDs. The main aim of PFA is to promote various aspects of well-being among workers exposed to potentially traumatic events, namely: safety, calmness, self- and community efficacy, connectedness, and hope. Regardless, the scientific relevance and effectiveness of PFA as a promising workplace solution has yet to be established. Furthermore, scientists still do not know how to implement such programs within high-risk organizations.

**What was the aim of the study?** In May 2018, Urgences-Santé (i.e., EMT corporation for the Montreal area) implemented PFA as a peer-support intervention for EMTs exposed to potentially traumatic events while at work. Urgences-Santé handles more than a third of all emergency calls in Quebec and is one of Canada's largest emergency medical services. In collaboration with Urgences-Santé, this project sought to evaluate the feasibility of PFA as a post-traumatic peer-support intervention among EMT. Feasibility studies are used to determine whether an intervention should be recommended for efficacy testing when research on the matter is still in its infancy. With Urgences-Santé stakeholders, three specific research objectives were elaborated to answer the question: "Can PFA work for EMTs?":

1. To assess the implementation of PFA at Urgences-Santé.
2. To evaluate the acceptability of PFA for EMTs.
3. To test the limited efficacy (i.e., efficacy testing with significant constraints) of PFA at preventing post-traumatic reactions among Urgences-Santé EMTs.

**How was the study conducted?** Interviews and documentation mining were used to examine the implementation processes in the workplace (obj. 1). Interviews were conducted to assess levels of acceptability for this intervention (obj. 2). Validated questionnaires were collected over time to offer preliminary evidence for the intervention's efficacy. Data collection began in July 2019. Data collection for objectives 1 and 2 is complete. Methodological and organizational barriers have slowed data collection on the efficacy of PFA for PTSD prevention. We are now trying to adapt the research design to evaluate the potential efficacy of PFA when compared to the usual forms of support offered by the organization.

### **What did the study find?**

#### **1. IMPLEMENTATION**

- PFA has been well implemented and is suitable for EMTs with no mental health training.
- Clinical supervision is required to maintain skills and monitor the intervention.
- Psychological support for peer helpers is crucial for program sustainability.

#### **2. ACCEPTABILITY**

- PFA offered by peer helpers is accepted by all levels of the organization.
- PFA has been well internalized by peer helpers who can intervene with ease and flexibility.

- Organizational support (e.g., support from managers, time off to offer PFA, room available for meetings with users) promotes acceptability.

- PFA fits well with the emergency rapid response culture of EMTs and their work (e.g., may be offered in the ambulance after the event)

### 3. IMPACTS (positive and negative)

- PFA de-stigmatizes the psychological support needs of EMTs.

- PFA improves psycho-social intervention with citizens.

- PFA increases the mental workload of peer helpers.

- There is a need for greater recognition of peer helpers to prevent work overload.

### 4. SUGGESTIONS FOR IMPROVEMENT

- Increase the number of peer helpers to share the workload.

- Reserve parts of the regular work schedule for PFA work.

- Broaden the intervention - offer PFA to EMTs who are on sick leave and to those returning to work.

**What are the implications of this study?** PFA can be an appropriate intervention for EMTs. However, peer helpers must receive regular clinical supervision and continuing education to ensure program fidelity and prevent burnout. Organizational accommodations are critical to the successful implementation and acceptability of this program. Specifically, PFA peer helpers must be relieved from their regular duties to support their colleagues and for them to feel valued. Regarding PTSD research, a randomized-control trial evaluating this early intervention poses considerable methodological, ethical and organizational challenges.

### **What are the key messages?**

- PFA fits nicely with PSP culture;

- PFA can be delivered by workers with no training in mental health;

- The clinical supervision of their PFA peer helpers is crucial for program success;

- By offering trauma-informed peer support, PFA fosters social support which is a strong protective factor in the prevention of PTSD;

- PFA offered by peer helpers meets the work-specific support needs of PSPs;

- In all, PFA offered by peer helpers can work for EMTs and PSPs, but its efficacy at preventing PTSDs remain uncertain.

**Provide a list of potential target audiences for this research:** Paramedic Chiefs of Canada

- Paramedic Association of Canada

- International Association of Fire Fighters

- Canadian Association of Fire Chiefs
- Provincial Paramedical colleges (some examples, not exhaustive)
  - o Alberta College of Paramedics
  - o Ontario Paramedic Association