## International Platform of Registered Systematic Review and Meta-analysis Protocols

# INPLASY

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Corresponding author:

Jennifer Classen

jclassen@dal.ca

Author Affiliation: Dalhousie University.

# First responder suicide in large disaster settings empirical literature systematic review protocol

Classen, J; Wu, H.

#### ADMINISTRATIVE INFORMATION

Support - There is no financial support for this project.

Review Stage at time of this submission - The review has not yet started.

Conflicts of interest - None declared.

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**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 13 June 2025 and was last updated on 13 June 2025.

### INTRODUCTION

eview question / Objective To systematically examine the literature on suicide and suicide prevention of emergency and crisis first responders in disaster settings. This study will answer the research question: What is the current knowledge and gaps about suicide and/or suicide prevention in first responder populations in disaster settings? This study will also address sub-question: What are the differences in literature for sub-populations of different first responder groups in disaster settings?

**Rationale** First responder mental health is becoming a more recognized aspect of crisis response and resiliency. As the first on any incident scene, the mental and socio-emotional wellbeing of first responders like firefighters, paramedics, and law enforcement officers is paramount to any response work. Moreover, there is a growing understanding of the mental health crises such as suicidal ideation among first responder populations that threaten the body harm of these pivotal individuals and negatively impact community wide health and preparedness. For example, state and national policies are passing that focus on increasing access (such as compensation benefits) to mental health and wellbeing supports. However, most of the literature on first responder suicide and suicide prevention has focused on the general occupational health rather than a focus on considering large scale disasters such as massive wildfires, earthquakes, hurricanes, and mass shootings. As such, this study seeks to examine the literature on suicide and suicide prevention for first responders in large disaster settings. Specifically, this study will investigate the differences in first responder sub-populations (such as firefighters, paramedics, law enforcement) in the related literature.

**Condition being studied** This systematic review will examine suicide, suicide ideation, suicide planning, and suicide prevention as a part of mental health crises within first responder populations in large disaster settings.

#### **METHODS**

**Search strategy** Three keyword groups are used to search systematically for relevant literature.

1. First Responders: "firefighter" OR "fire service" OR "responder" OR "paramedic" OR "law enforcement" OR "police" OR "9-1-1" OR "rescue" OR "dispatch" OR "incident commander" OR "aid worker" OR "firebrigade" OR "fire brigade" OR "disaster worker" OR "emergency worker" OR "EMT" OR "emergency medical technician"

2. Suicide and Mental Health: "Suicid" OR "PTSD" OR "mental health" OR "self-harm" OR "self-injur" OR "post-traumatic stress disorder" OR "depression" OR "anxiety" OR "panic"

3. Disaster Setting: "disaster" OR "hazard" OR "crisis" OR "wildfire" OR "hurricane" OR "earthquake" OR "pandemic" OR "tornado" OR "flood" OR "mass shooting" OR "tsunami" OR "eruption" OR "typhoon" OR "cyclone" OR "landslide" OR "mudslide" OR "explosion" OR "mass casualty" OR "outbreak" OR "collapse" OR "dam" OR "blackout".

**Participant or population** This review will focus on the emergency and first responder community including, but not limited to, firefighters, paramedics, and law enforcement officers.

**Intervention** This review will not evaluate any interventions.

**Comparator** This review will not evaluate any comparative interventions.

**Study designs to be included** Empirical, primary data studies with original data using quantitative, qualitative, or mixed methods.

**Eligibility criteria** Additional inclusion criteria for all databases: empirical primary studies with original data; English language; peer-review journal articles.

Additional exclusion criteria: non-original data studies (e.g., literature reviews); first responders responding to mental health calls/events.

**Information sources** The information will be based on electronic databases: Web of Science, SCOPUS, ProQuest, PubMed, Embase, EBSCOhost.

**Main outcome(s)** Based on the review results, we will be able to identify the findings of suicide and suicide prevention efforts for first responders. We expect the study to generate knowledge in the

following:

1. Suicide Ideation Factors: the literature review will synthesize existing scholarship on the current known factors and aspects of suicide ideation for first responder communities. Specifically, we will examine social and psychological dimensions of work, home, and community that compound mental health concerns or support mental health and wellbeing. By examining the literature on known factors and aspects of suicide and extreme mental health concerns in first responder populations, this review will identify avenues and gaps to generate knowledge for developing suicide prevention programs.

2. Suicide Prevention Efforts: the literature review will synthesize existing scholarship on the current efforts of suicide prevention in first responder populations. This review will focus on the social and psychological aspects of the prevention efforts, their impacts on suicide and suicide ideation in first responder communities, and their ecological and longitudinal effects of the program. By examining the prevention efforts ecologically and temporally, this review will identify effective programmatic decisions for developing educational programs for suicide prevention in first responder populations.

3. Differences in First Responder Populations: this literature review will synthesize and disaggregate the current scholarship based on the different first responder populations and their geographical locations. As such, this review will identify knowledge and gaps specifically about which first responder populations have been the emphasis of study and which have not.

Additional outcome(s) There is also a growing body of literature on mental health education programs for first responders to be used in crisis response such as mental first aid. In other words, these educational programs develop job skills in first responders that may have reciprocal impacts on the responders themselves and their own suicide prevention efforts.

**Data management** All formal screening process will be done with the use of COVIDENCE. Covidence, a web-based tool, supports conducting straightforward systematic reviews and meta-analyses. Specifically, Covidence will support the data management of:

1. Importing/Ingesting Studies: Using databases such as EBSCOhost, ProQuest, etc., search results will be imported into Covidence to quickly identify duplicates in the initial results across the databases. Data management of this phase will include thorough lists from each of the appropriate databases as an ris, xml, html, or csv file. 2. Screening and Selection: Covidence's interface allows for efficient multi-reviewer screening of eligible studies based on predefined criteria with the option for dispute resolution within the tool. Data management at this phase will include tracking the screening result and documenting reasoning.

3. Data Extraction: Selected included studies will be exported from Covidence including documented relevant study characteristics, outcomes, and findings. Consistency and accuracy of data is ensured by each research team member being able to download the same extraction data. Data management at this phase will include the organized extracted data for analyzing and synthesizing findings.

4. Synthesis and Analysis: After data extraction, data will be synthesized and analyzed using Covidence tools including descriptive summaries, data graphs and visuals, and subgroup breakdowns. Visualizing and interpreting data is facilitated within the platform for collaborative analysis, promoting validity of findings. Data management at this stage includes organizing findings and documenting transparency for reporting methods and results.

5. Reporting and Exporting: Reports and data will be exported using Covidence including Microsoft Word and Excel files along with RevMan files. As such, this tool supports writing reports, manuscripts, and supplementary materials such as compiled data. Data management at this stage includes finalizing data corpus, maintaining documentation, and ensuring data validity and reliability through transparency and reproducibility.

Quality assessment / Risk of bias analysis Quality assessment: Two stages are used to ensure quality. First, multiple reviewers independently screen preliminarily identified studies via titles and abstracts using Covidence with an additional reviewer to resolve disputes. Second, multiple reviewers will screen the full text of screened studies for inclusion/exclusion with an additional reviewer resolving disputes.

Risk of bias analysis: Covidence tools support preemptively identifying domains and assessment criteria to risk selection bias. Data management will involve documenting decisions about included/ excluded studies for transparency. A risk of bias assessment scale will not be used as this is a social science-based systematic literature review that will not directly involve human subjects.

**Strategy of data synthesis** Data synthesis will occur through multiple stages.

1. Data Organization: After screening and data extraction in Covidence, data will then be exported

and organized via study meta-data (e.g., author, year, title) and include relevant characteristics, outcomes, and findings in a format for a qualitative analysis software (e.g., NVivo) or spreadsheets (e.g., Excel). This method will support accessibility and useability of relevant information for the thematic analysis.

2. Data Familiarization: Thematic analysis will begin with the research team becoming familiar with the extracted data including reading through the corpus to understand the width and breadth of the information.

3. Generating Initial Codes: Qualitative analysis software will support initial code generation with specific attention given to research questions and aims. Descriptive labels for codes will be used for specific concepts, themes, and/or patterns identified across the data. Specifically, inductive coding methods will be used to support emergent themes.

4. Organizing Codes: Codes will be categorized into thematic relationships based on the identified research questions. Triangulation across code categories will occur through repeated discussions across the research team to reduce bias. In particular, overarching themes in relation to the research questions will identify key patterns and support internal consistency of the study while being reflective of the studies included.

5. Reviewing and Refining Themes: As mentioned before, codes and themes will be repeatedly reviewed and refined through multiple iterations and across the research team. Iteration will also occur throughout comparing studies included and refining the definitions of the themes for accuracy and consistency.

6. Interpretation and Reporting: After concluding the thematic analysis, the research questions will inform interpretation. Findings will be synthesized across the included studies to provide contextualized explanations for the observed patterns. Implications for theory, practice, or policy, will also guide interpretation and reporting of findings. Thematic analysis results will be reported in the systematic literature review in relevant themes to the research questions and in discussion with practical implications.

**Subgroup analysis** Depending on the selected literature, sub-groups may include sub-populations within the first responders community (e.g., firefighters, paramedics, law enforcement), and geopolitical regionality (e.g., nations and continents).

Sensitivity analysis Sensitivity will be considered through the multiple screening stages. Data will then be inductively, thematically analyzed based on the contents of the included study to look for core themes based on the research questions.

1. Importing: Studies involving selected keywords based on the three groups (population, mental health, and education) will provide the initial list to be Screened.

2. Screening: Screening will occur one-by-one to include or exclude based on the criteria in the title and abstract.

3. Data Extraction: Full-text reviews will then occur to determine the final inclusion/exclusion of a study based on the criteria for the research question(s).

Language restriction English.

Country(ies) involved Canada.

**Keywords** First responder; suicide; suicide prevention; emergency responder; systematic literature review; crisis responder.

**Dissemination plans** This study will result in a peer-reviewed publication.

#### **Contributions of each author**

Author 1 - Jennifer Classen - This author will lead the theoretical framing, study design, literature review, analysis, and manuscript writing. Email: jclassen@dal.ca Author 2 - Haorui Wu - This author will contribute to study design, analysis, and manuscript writing. Email: haorui.wu@dal.ca