MOVEMBER®

A SCOPING REVIEW OF PREVENTION AND EARLY INTERVENTION PROGRAMS USED IN CANADA, AUSTRALIA, NEW ZEALAND, IRELAND, AND THE UNITED KINGDOM

VETERAN AND FIRST RESPONDER MENTAL ILL HEALTH AND SUICIDE PREVENTION

Veteran and First Responder Mental Ill Health and Suicide Prevention: A Scoping Review of Prevention and Early Intervention Programs Used in Canada, Australia, New Zealand, Ireland, and the United Kingdom

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FORWARD

Movember is one of the leading international philanthropic funders of suicide prevention and mental health early intervention initiatives. Since 2006 we have invested in innovative and evidence-based early intervention and prevention programs that work well for men.

In the countries Movember works in, three out of four suicides are men, and we are keenly aware of the need to significantly strengthen investment in gender sensitive approaches that will prevent so many men dying too young.

Our approach has been to build evidence of what works to keep men and boys mentally healthy and encourages them to take preventative action early, especially during tough times.

While the issues are complex and there are no simple solutions, we have seen great promise in many of the programs we have trialled.

Movember is now supporting the national and international scaling of initiatives targeting young men and adolescent boys, indigenous men, fathers and socially isolated men. We have also supported a number of programs addressing the needs of veterans and first responders.

In 2018, in partnership with Distinguished Gentlemen's Ride (DGR), Movember prioritised further investment in prevention and early intervention initiatives targeting these communities.

To inform our future direction, we commissioned Dr Donald McCreary to undertake a review of the available evidence for research in this area.

Having worked closely with the first responders and veteran communities over the past decade, we know that there is a strong commitment across the sector to tackle the challenges around the current lack of evidence for what works for these groups.

Movember, in partnership with DGR, now plans to invest in collaborative efforts with the veterans and first responders communities in order to build the evidence of the most promising initiatives and then mobilise the adoption of these efforts internationally.

As a global funder Movember is uniquely placed to support these efforts and ensure that men are supported to lead healthier, happier and longer lives.

We hope that this report will also inspire other mental health funders to collaborate alongside us in order to achieve the best outcomes for men.

Paul Villanti
Executive Director Programs
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EXECUTIVE SUMMARY

There is growing evidence suggesting that, compared to those in the general population, military veterans and first responders are at greater risk for both mental ill health and suicide ideation/completion. The first responder community, especially, has begun to address these concerns by developing or implementing various mental ill health/suicide prevention and early intervention programs. However, what are these programs and, perhaps more importantly, what is the evidence supporting their effectiveness?

With that in mind, the overall goals of this scoping review are as follows:

1. Identify the general types of mental ill health prevention, mental ill health early intervention, and suicide prevention programs used by first responder (i.e., police, firefighter, and paramedic/emergency medical technician/ambulance) and military veteran communities in Canada, Australia, New Zealand, Ireland, and the United Kingdom.
2. Identify similar programs aimed at the families of first responders and military veterans in the same regions.
3. Once the main program types are identified, conduct a review of the available evidence supporting their effectiveness.
4. Summarize the available evidence, identifying some potentially promising programs for both employees and families.
5. Identify potential gaps in the first responder and military veteran (including families) mental ill health prevention, suicide prevention, and early intervention program spaces.

APPROACH

To address these goals, a three-pronged approach was taken. The first approach was to identify the existing scientific research supporting prevention and early intervention programs, both in the general workforce (where applicable) and in veteran and first responder organizations. This will provide an understanding of the current level of known evidence about the existing programs. The second approach was to identify and interview a series of Subject Matter Experts (SMEs) in each country. The information gathered here will help identify the types of programs being used, some specific programs in use, whether organizations are collecting robust evidence of program validity, and SME's perceived gaps in the available knowledge. The third approach was to explore Google and three social media sites (LinkedIn, Twitter, and Facebook) to find additional program information. It is important to note that these types of programs are occurring within the context of evolving national guidelines or standards that promote the identification and management of psychological health and safety in the workplace. As such, these types of guidelines or standards also were reviewed.

FINDINGS

Before conducting the review, I first reviewed each country's national standards or guidelines for managing psychological safety in the workplace. These guidelines are evidence-based, highlighting the importance of several types of organizational barriers as causes of poor psychological health in the workplace. Three out of five countries have official guidelines, and they are mandatory to follow in countries that are part of the European Union (i.e., both Ireland and the UK, as of this writing). Canada has a general set of guidelines and a

newer set specifically designed for paramedic organizations. Safe Work Australia recently released similar guidelines but, although they are an official government body, their guidelines appear to be neither official nor mandatory.

My review of the scientific literature examining the effectiveness of workplace mental ill health prevention programs revealed that, whether in the general workforce or in first responder communities, there is little evidence of overall effectiveness when it comes to psychoeducation and skills-based programming. When programs do improve the mental health of those taking them, the effects tend to be small and diminish over time. The program most commonly used by first responders, the Road to Mental Readiness, has no evidence supporting its ability to reduce mental health symptoms over time. Furthermore, the evidence for its ability to reduce stigma is mixed. The one type of program showing potential at improving mental health is based on the mindfulness concept. Mindfulness-based interventions appear to provide a moderate improvement in mental health, but there still needs to be a lot of research done to be sure they are being implemented effectively in the workplace and evaluated more rigorously, especially as there is evidence that poorly developed and implemented programs can cause harm. There was no evidence, at least at this stage of the review, of any mental ill health prevention programs directed towards veterans, though transition to civilian life was highlighted as a potential program focus area.

Evidence for the effectiveness of early intervention programs in first responders was mostly derived from the 2016 review by Beshai and Carleton, and supported by similar findings and guidelines from the UK's National Institute for Clinical Excellence (NICE, 2005; 2018) when it comes to preventing PTSD after trauma exposure in the general population. Beshai and Carleton identified 14 early intervention approaches to reducing mental ill health in first responders and reviewed the evidence supporting each. Their review paper noted that, when evidence existed, it tended to have a small effect size (i.e., not overly meaningful). The two NICE guidelines noted the poor quality of the research evidence and, in their most recent review (NICE, 2018) suggest that early interventions should not be used for the purpose of reducing future symptoms of PTSD. A recent paper by Richins et al. (2019), however, suggests there might be some nuance that the NICE guidelines do not address. I highlighted three early intervention programs that might show future promise.

For suicide prevention programs, the existing evidence is mixed. There are some programs that have shown evidence of effectiveness in some contexts, but not others. However, it is important to note that most workplace suicide prevention programs are not evaluated for effectiveness (Milner et al., 2015; Milner & LaMontagne, 2018a; Milner & LaMontagne, 2018b). Thus there are no systematic reviews and meta-analyses to rely on here. This is problematic because single studies tell users very little about the extent to which a program can be effectively translated from one workplace to another. It also tells users little about the magnitude of the findings and what elements of the program may be most important. As Milner and LaMontagne (2018b) noted:

"It is also significant that there is close to a complete lack of systematic research on workplace suicide prevention activities. This point not only refers to the limited number of evaluated studies in the area (as seen in our review, only a handful of interventions had published evidence of effectiveness) but also to the fact that workplace suicide prevention efforts should (if appropriate) be aligned with current "best practice" in workplace mental health more generally … Each of these guidelines advocates preventive (e.g., improvement of working conditions) as well as reactive (e.g., addressing mental health problems as they arise the workplace context) measures." (p. 69)

The SME interviews revealed a lot of concern about the lack of evidence for existing programs and the lack of sharing of information about who is doing what and what evidence they are finding to support their programs. A total of 25 SMEs participated. The SMEs identified 12 types of mental ill health prevention programs, 11 types of mental ill health early intervention programs, and 5 types of suicide prevention

programs. Most of those programs were aimed at the veterans and first responders themselves, with only 2 types of programs being directed towards families.

When my discussions with the SMEs were reviewed, a total of 6 themes emerged. They are:

- Theme 1: There Are No Validated Mental Ill Health Prevention Programs Available
- Theme 2: Everyone Appears to be Working on Their Own
- Theme 3: Organizations are Trying to Find a Balance Between Doing the Job and Protecting their People
- Theme 4: No One Seems to be Aware of the Evidence Limitations for Early Intervention Programs
- Theme 5: No One is Applying a Gendered Lens to the Programs they Develop and Implement
- Theme 6: There May be Cohort Differences in Mental Health Prevention Expectations

The reviews of Google, LinkedIn, Twitter, and Facebook identified several potential programs. Some of these had been previously identified by the SMEs, while others were new to the review. I was able to identify additional programs in all countries, except Ireland, where there seems to be a relative lack of focus on mental ill health prevention in first responders and veterans. Most additional programs were found in Canada or Australia and most of these programs appear to be focused on psychoeducation (especially website portals and phone apps), with some programs focusing on training. Finally, some programs were run by charities or not-for-profit organizations, rather than first responder organizations or governmental departments.

As part of the internet and social media review portion of this report, it became apparent that there needed to be guidelines to help define what is, and what is not, a program. Based on the inclusion and exclusion criteria from many of the systematic reviews and meta-analyses utilized in Chapter 2, I devised the following criteria:

<u>Inclusion criteria</u> (i.e., what a program is):

- A formal mental ill health- or suicide-focused prevention/early intervention program has a purpose-built curriculum that is designed to be taught or given to others, and then implemented by the learners. Potential sub-elements may include the following:
    - It may or may not have support tools (e.g., apps, other web-based tools, pocket cards, books, peer support) built into the program;
    - It may be a one-off training session or it may need regular, ongoing maintenance sessions, but this distinction needs to be made clear in the program design and implementation;
    - Ideally, there should be an emphasis on program fidelity, in order to control for instructor-based effects (i.e., it should work equally well across all instructors who implement the program as instructed); all instructors must follow the same implementation approach, with nothing added or subtracted.
- It will be based on accepted scientific principles and mechanisms (e.g., cognitive behavior therapy, psychoeducation). If those scientific principles or mechanisms are being used in any way that is different from the original, supporting efficacy or effectiveness data (e.g., using clinical intervention procedures, such as diaphragmatic breathing, in a prevention approach), that program cannot be termed evidence-based until a proper evaluation is conducted.
- There will be specific outcomes built into the program (e.g., reduction in mental health symptoms), such that efficacy and effectiveness are measurable. In other words, there must be a way to determine that the program does what it says it is supposed to do.
- Peer support programs are often a common approach to mental health risks in high stress workplaces, or workplaces with the potential for traumatic experiences. These types of programs attempt to connect someone undergoing a potential mental health problem with someone who can

help. That person may or may not have lived experience in the area. The peer will act as a social support mechanism, and potentially as a connection to local health resources. These types of programs will be included only under certain conditions:
    - The peers must come from the same occupational grouping as the person experiencing problems;
    - The following elements must be included in the program: (1) there must be training provided to the peer support providers (e.g., Mental Health First Aid); (2) the roles of the peer-mentee relationship must be clearly defined; (3) there must be appropriate, clearly stated goals for the program (e.g., a reduction in mental health symptoms); and (4) those goals must be testable in order to determine if the program does what it says it is supposed to do;
    - There must be adequate support from mental health professionals.

Exclusion criteria (i.e., what a program is not):
- Motivational speakers are not delivering programs.
- Informal, one-off sessions by a person or persons with lived experience are not programs.
- When the foundations of what is being presented are not based on scientific principles or mechanisms, it is not a program.
- When what is being taught or presented is neither designed nor implemented in a way that can test whether the appropriate outcomes are being achieved, they are not programs.

IDENTIFIED GAPS

The literature review and SME interviews revealed a wide range of gaps in our existing knowledge of mental ill health prevention/early intervention and suicide prevention programs directed at first responders, veterans, and their families.

The review of the academic and grey elements of the scientific literature (Chapter 2) identified 12 gaps:
- Gap 1: A Lack of High Quality Prevalence Data
- Gap 2: An Overly Restrictive Focus on Potentially Traumatic Events in Veteran and First Responder Research
- Gap 3: An Overly Restrictive Focus on PTSD in Veteran and First Responder Research
- Gap 4: A Lack of Sufficient Evidence Supporting Ongoing Programs
- Gap 5: An Over-Reliance on Individually-Oriented Prevention Programming
- Gap 6: Programs are Implemented Without an Appropriate Understanding of Behavior Change
- Gap 7: Relative Lack of Focus on Veterans, Especially Those Most At-Risk
- Gap 8: Relative Lack of Focus on Families, Especially Those Most At-Risk
- Gap 9: Programs that Assess the Processes or Intermediate Outcomes, But Not the Desired Outcomes
- Gap 10: Programs are Implemented Without Proper Fidelity
- Gap 11: A Lack of High Quality Evidence for the Effectiveness of Suicide Prevention Programs
- Gap 12: Prevention and Early Intervention Programs Have Not Applied a Gendered Lens

The SME interviews (Chapter 3) identified 6 gaps:

- Gap 1: We Don't Know What's Effective
- Gap 2: There's Too Much Focus on PTSD
- Gap 3: There's Too Much Focus on Individual Resilience, as Opposed to the Organizational Barriers to Well-Being
- Gap 4: We Need to Focus More on Transitions (Recruitment, Retirement) Along With Everything in Between

- Gap 5: The Stoic Organizational Culture Can Be a Barrier to Mental Health Prevention
- Gap 6: We Need More Research and Evidence Gathering

GENERAL RECOMMENDATIONS

Based on the findings from this scoping review, I feel the following 7 recommendations are warranted:

- Recommendation 1: Better Quality Mental Health Surveillance Data
- Recommendation 2: Prioritize Evaluation and Develop Evaluation Standards
- Recommendation 3: Move Beyond the Focus on Traumatic Events
- Recommendation 4: Move Beyond the Focus on PTSD
- Recommendation 5: Institute Separate Suicide Prevention Programs
- Recommendation 6: Better Targeted Programs for Veterans
- Recommendation 7: Families Need More than Just EAP Access
- Recommendation 8: The Need for a Gendered Lens in all Prevention and Early Intervention Programming

CONCLUSIONS

The findings emerging from this scoping review are both exciting and disappointing. The excitement comes from seeing that many first responder and veteran organizations recognize the importance of the mental health burden being faced by these groups and are acting in ways to try to mitigate the problem.

However, this is tempered by disappointment in a couple of areas. First, many organizations (especially first responders) appear to be implementing prevention programs without actually validating them (i.e., making sure they do what they say they do). This is important because some research suggests that programs that are touted as evidence-based or evidence-informed are often adapted for use by these organizations (i.e., they are not implemented in the same way they were developed) without being re-evaluated for effectiveness. For example, some organizations put in place training that it based on validated research from the area of clinical psychology. That is, they have taken concepts and applications that work in regular, one-on-one or group therapy contexts (e.g., psychoeducation) and have implemented them in a large-scale, one-off training, prevention context. And they assume that the applications will work in the same way that they do in therapy.

Second, the types of programs most commonly implemented are focused on giving individual employees resources to cope more effectively with the traumatic aspects of their jobs. This places an undue burden on the employees for maintaining their own psychological health when research shows that non-traumatic, organizational stressors are often more problematic. While trauma exposure is part of the job and will not go away, these non-traumatic aspects of the workplace are more under the control of the organizations themselves but are rarely the subject of change management initiatives. Moreover, the national standards and guidance documents often emphasise the importance of balancing the burden between the individual and the organization when creating psychological safety in the workplace.

There is a lot of room for improvement in the workplace mental health space in general, and given their increased mental health burden, first responder and veteran organizations should be leading the way. These organizations need to be properly enabled, both financially and with validated policies and procedures in place. Given the level of fiscal restraint many governments are experiencing, spending money upfront to develop and validate effective mental ill health prevention and early intervention programs, as well as suicide prevention programs, will actually save money in the long term. Not to mention lives.

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DEFINING TERMS AND CONCEPTS

When communicating complex ideas, it is important to be certain that everyone has the same understanding of the terms being used. Doing this not only reduces the potential for confusion and misinterpretation, but it also maximizes the probability that all readers will take away the same messages from the report. This is especially the case in science reporting, because many of the end users are not as familiar with what is often important, day-to-day language for researchers and evaluators. To that end, this section will describe and define some key terms and concepts. I recommend readers familiarize themselves with these before reading the full report.

Control or Comparison Group Intervention Strategies: Using this approach to assess the validity or effectiveness of a program or intervention, people who received the intervention are compared to those who did not receive the intervention (the control group) or those who received an alternative intervention (the comparison group). Both groups are assessed beforehand and afterwards; it is desirable to have as many post-intervention assessment periods as possible to examine changes in the program's impact over time. The evaluators examine changes across times in both the intervention group and the control or comparison groups, and they also compare the two at each time interval. There should be no differences between the intervention and comparison/control groups at the beginning of the study (also known as baseline), but over time the intervention group should come out better than the comparison or control groups. There are many types of approaches that fall within this general method and some examples are listed below.

- In a randomized control trial (RCT), individuals are randomly assigned to receive or not receive the new program.
- In a group randomized control trial (Group RCT), groups of people (e.g., classes, teams, work units) are randomly assigned to receive or not receive the new program.
- In a comparison group intervention, individuals or groups of individuals are randomly assigned to receive either the main intervention or a secondary intervention. The goal with this approach is to determine whether the main intervention is superior to the secondary intervention. The secondary intervention is usually one that is currently in use so that evaluators can compare the effects of the two programs directly.
- In a quasi-experimental intervention, individuals or groups cannot be randomly assigned (usually for logistical or ethical reasons) to receive the intervention or an alternative; they come to the program already pre-assigned to a group (e.g., those who have experienced a traumatic event vs. those who have not). The goal is to compare the two groups to see if the intervention had stronger or weaker effects in one group compared to the other.

In the RCT, Group RCT, and comparison group approaches, the randomization to the intervention or control/comparison groups allows the researchers to make causal inferences (i.e., the treatment caused improved in mental health symptoms over time). Therefore, these approaches are the strongest form of evidence for a single study (RCT > Group RCT > Comparison). The quasi-experimental approach is substantially weaker in design and can limit generalizability of findings. Furthermore, statements of causation cannot be made for studies using this design.

Effectiveness: When evaluators test a program to make sure it does what it says it is supposed to do, they must decide whether to test the program in one of two ways: for effectiveness or efficacy. Effectiveness describes the type of research study used to evaluate a program under normal operating conditions (e.g., not all members of an occupational group take the program; the program is delivered by different people; not all members do all the work required or take part in all the follow-up assessments). This is a test of a program's validity.

Effect Size: Effect size statistics tell researchers how strong or robust the associations or effects they have observed really are. An Odds Ratio (OR) is a common measure of effect size in epidemiological research examining the associations between mental health diagnoses (yes/no) and the potential causes of that diagnosis (e.g., workplace stressors, number of exposures to traumatic events). Effect sizes can be nil, very small, small, moderate, large, or very large, depending on the types of criteria being used. The stronger the effects, the more meaningful they are in the real world. Many applied researchers feel that moderate effects or larger indicate decent program effectiveness.

Efficacy: When evaluators test a program to make sure it does what it says it is supposed to do, they must decide whether to test the program in one of two ways: for efficacy or effectiveness. Efficacy describes the type of research study used to evaluate a program under ideal conditions (e.g., all members of an occupational group take the program; the program is delivered by the same person; all members do all the work required and all take part in the follow-up assessments). This is a test of a program's validity. Tests of efficacy are less common than tests of effectiveness in applied research contexts.

Evidence-based: When a program is said to be evidence-based, it is being implemented in exactly the same way it was initially validated (e.g., a program developed as a police mental ill health prevention is implemented for prevention purposes, but in a different group of police officers). Even when a program is evidence-based, it is always wise to evaluate it for overall effectiveness because there are many other factors associated with how a program is implemented that can have adverse effects on its effectiveness.

Evidence Grading: There are various levels or grades of evidence, from weak to strong. For the purposes of this scoping review, I will be using the Evidence Hierarchy for Policy Decision Making developed by Ratcliffe (2019). This approach is a variation of the Maryland Scale of Scientific Methods grading system (Sherman et al., 1998), but altered to be more focused on the wider range of internal and external, basic and applied evidence used in the policy development process.

- *Weak Evidence*: Examples of weak evidence for a program's validity include anecdotes, surveys of user satisfaction, non-peer-reviewed research reports.
- *Slightly Stronger Evidence*: An example of slightly stronger evidence for a program's validity includes a one-off study with no control or comparison group.
- *Somewhat Stronger Evidence*: Examples of stronger quality of evidence for validity includes before and after comparisons with either one group or several groups.
- *Strong Evidence*: The most ideal form of evidence for a program's validity comes in the form of randomized control experiments (e.g., when individuals or groups of individuals are randomly assigned to either the program or the control group), systematic reviews, and meta-analyses (i.e., procedures to assess program validity over multiple studies, taking into account the strength of the evidence). Reviews and meta-analyses are the most important forms of strong evidence because a program cannot be determined to be valid after only a single implementation; validation studies must be replicated in multiple groups before a program is truly said to do what it was designed to do. These types of reviews help determine how well programs are functioning across several implementations.

An informative table giving an example of Ratcliffe's model applied to the policing context can be found at https://www.reducingcrime.com/post/evidence-hierarchy.

Evidence-informed: When a program is said to be evidence-informed, it is being implemented differently than the way it was initially validated. This difference can be structural (e.g., not all elements of a larger program

are being given; there is a different research focus, such as clinical intervention vs. general prevention) or it may be a different population (e.g., a mental health intervention program developed for police being given to firefighters or paramedics). When a program is evidence-informed, a rigorous evaluation is needed to be sure the program works as intended in this new situation.

Fidelity: When programs are developed, there are key processes that must be followed. Many programs, for example, come with an implementation manual; these are often referred to as "manualized" programs. Following the instructions for providing the program is referred to as maintaining program fidelity. This is especially important when different people are providing the same program. If people do not deliver it in the same way, it is unknown whether any effects (or lack thereof) are due to the program or the instructor. Deviation from the program manual also can be potentially harmful to participants. Lack of fidelity can also occur if only a part of the original program is delivered.

Gendered Lens: Applying a gendered lens to a health intervention means developing, implementing, and evaluating the program with the knowledge that men and women may respond differently to the program and its content. This is important in the veteran and first responder context because most people in these groups are men. Men are less likely to take part in health-related interventions and, when they do take part, they are less likely to complete the program. The reasons for this are thought to be mostly a function of traditional male role norms. To address this, program developers often need to consult with groups of men to determine how best to attract them to the program, how to keep them there (e.g., program content, language, activities), and how to determine whether the program is working. For example, men may not like programs focused around "mental health" but may be more attracted to programs that emphasize "mental strength".

Health Prevention: Within the public health sphere, there are three different types of prevention. It is important to know the distinctions among them because different prevention goals in the veteran and first responder spaces may be focused on more than one of these types. Within applied research, I have seen the elements of health prevention described slightly differently across contexts. In this report, I am using the following interpretations:

- *Primary Prevention* aims to stop the onset of the illness before it has even begun. Within the biomedical context, an example would be vaccinations. Within the workplace mental health context, an example would be training aimed at preventing mental ill health, or early intervention approaches for those already exposed to a potentially harmful agent (e.g., a traumatic or potentially traumatic event) but not yet experiencing symptoms. Other examples of workplace primary prevention would be changing known workplace barriers to poor mental health (e.g., shiftwork, work overload, role overload, organizational justice concerns) to prevent future mental health concerns among employees.
- *Secondary Prevention* involves identifying illness at its earliest possible stage so that effective treatments can be implemented. There is also a focus here on identifying the risks to that illness (e.g., behavioral, organizational, biological, psychological, social), so that potential changes can be implemented to reduce risks in the future. Within the workplace mental health context, an example of illness identification would be the routine assessment of the psychological well-being of at risk employees (e.g., first responders). An example of risk identification would be assessing the impact of known organizational barriers to physical and mental health (e.g., overwork) and examining the effects of various organizational strategies designed to mitigate those adverse influences.
- *Tertiary Prevention* focuses on those who are already ill, and attempts to restore overall health and function. While this nominally addresses the notion of treatment, the prevention element is focused on limiting or delaying complications arising from the illness. For example, tertiary prevention

strategies aimed at getting affected individuals into treatment as soon as possible can prevent the development interpersonal and occupational conflicts, which may result in the breakdown of relationships and the loss of one's job.

Most of the prevention programs within the veteran and first responder mental ill health context focus on primary prevention. That is, these programs are designed or implemented to prevent the development of mental ill health at some future point, if or when someone is exposed to stressful or potentially traumatic events. It is debatable whether crisis management or early intervention programs are primary or secondary prevention strategies because not everybody will experience symptoms of an acute stress response after experiencing a stressful or potentially traumatic event.

Mental Ill Health Early Intervention Programs: These are interventions designed to prevent the development of mental ill health following a recent exposure to various workplace stressors (e.g., non-traumatic workplace stressors; potentially traumatic events). This intervention is given after exposure to the stressful or traumatic events in the hopes of reducing the negative outcomes that may (but doesn't always) result from being exposed. These types of programs are also referred to as crisis management programs. There is a debate as to whether mental ill health prevention programs given to already working first responders should be called prevention or early intervention, since most will have experienced at least one potentially traumatic event within the first month of working. The assumption in this debate is that a true prevention program may only be possible during initial occupational training.

Mental Ill Health Prevention Programs: These are interventions designed to prevent the development of mental ill health following exposure to future stressors (e.g., workplace stress; potentially traumatic events). This intervention is given before experiencing the stressful or traumatic events and is thought to act as a prophylactic.

Operational Stress Injury: This is a term coined in the Canadian Armed Forces (CAF) that has since been adopted by the military, veteran, and first responder communities in many countries. It refers to a mental health condition resulting from the potentially traumatic exposures individuals experience while performing their operational duties. The goal of the term was to destigmatize mental ill health in the CAF by noting that, if and when it does occur, it is a job-related injury just like the physical injuries personnel can experience. A potential downside of the term is that it may stigmatize mental ill health caused by non-operational exposures to potentially traumatic events (e.g., severe illness, motor vehicle accidents).

Peer Support: This refers to specific types of early intervention programs whereby an individual from the same occupation, sometimes with lived mental ill health or suicide attempt experience, helps other individuals cope with the outcomes of stressful or potentially traumatic events. The specifics of how this happens, as well as the training given to the peer supporters themselves, are determined by each program.

Pre-Post Intervention Validation Strategy: Using this approach to assess the validity or effectiveness of a program, the same group is assessed on the important outcome measures before and after the program was delivered. There is no control or comparison group. In some instances, participants are assessed at multiple time points after the intervention is completed (e.g., 1-, 2-, 6-, 12-months later). The use of multiple post-intervention assessments is desirable because it helps researchers and program developers know how the potential effects of the program change over time. This approach is a weaker form of assessing a program's validity, compared to an approach using a control group.

Psychoeducation: This is a therapeutic approach whereby individuals are given information that will help them to better understand, cope with, and hopefully resolve their current or potential mental illness. Psychoeducation can also be delivered to the supporters of those with mental health conditions, or who are

at risk for poor mental health. Within the veteran and first responder communities, psychoeducation can take the form of information about what stress is (and is not), how stress affects the mind and body, and various coping strategies that might be helpful when one is experiencing stress. Psychoeducation is a large part of cognitive behavior therapy, but has been adapted for the prevention space. Many mental ill health prevention and early intervention programs use psychoeducation.

Resilience: This is a term that emerged from the study of positive psychology. It focuses on people's abilities to successfully cope with stress and trauma. People who cope with stress and traumatic events more effectively are said to be more resilient. Unfortunately, resilience is a buzz word rather than a scientific concept. There is no agreed upon scientific definition of resilience, meaning that different people can mean different things when they use it. For some, it means the ability to bounce back to one's normal self after experiencing some form adversity. For others, it means the ability the cope effectively with the stress resulting from experiencing some form of adversity. Because there is no agreed upon definition of resilience, there is no consistent way of measuring it. Available resilience measures are mostly repackaging existing psychological constructs (e.g., social support, flexible coping, mastery, optimism) with minimal (if any) acknowledgment of the decades long research history in each area. All programs or studies that mention resilience should be approached with caution and special attention should be paid to how they define and measure the concept.

Review Types: When it comes to reviewing the previous research in a given area (e.g., mental ill health prevention programs in the workplace), there are three general types of review. Each type differs in its overall strength in terms of evidence grading.

- A *Narrative Review* is an unstructured review in which authors collect the available evidence around a certain question and provide an interpretation of the ways in which the existing evidence supports that question. These are often critical analyses of concepts and the data supporting them.
- A S*ystematic Review* is a structured review of the available literature on a specific topic. Reviewers using this approach go through a series of explicitly outlined steps to make their reviews more transparent and to reduce potential biases – they devise clear search criteria, noting both the search terms and databases they accessed during the review; they create inclusion and exclusion criteria for the studies included in their review, justifying each; they make their processes for selecting which papers are kept and which are discarded transparent and create a standardized flow chart of their decision-making process; they describe the studies in their review in a systematic way, identifying differences in populations and methods (e.g., participant demographics, study design, date of study); and they interpret their findings according to the strength of the studies in their review (i.e., they give more weight to studies using stronger research methods). In most cases, systematic reviews offer qualitative interpretations of the papers in the review.
- A *Meta-Analysis* is a systematic review with quantitative findings. These reviews examine the effect size(s) of each study (some studies contain multiple effect sizes) and pool them together, creating an overall effect size across studies. Meta-analyses also can examine the impact of study design variables on the average effect sizes (e.g., interventions using lower quality research methods typically report larger effect sizes than studies using more rigorous methods) or examine differences across populations.

In terms of evidence quality, meta-analyses are considered the strongest forms of evidence, with systematic review behind them, and narrative reviews behind them.

Statistical Significance: When researchers say that a relationship or an effect is "statistically significant", they mean that the association they have observed is not likely due to chance alone. The likelihood that the effect did not occur by chance alone is often given as a probability value, such as $p < .05$, $p < .01$, or $p < .001$

(i.e., the chance the finding occurred by chance is 5 times out of 100, 1 time out of 100, or 1 time out of 1000). Using different probability values does not equate to stronger (e.g., $p < .001$) or weaker ($p < .05$) findings. To determine the strength of the findings, researchers need to use effect size statistics.

Stress: Stress is the psychological and physical response people experience when they are unable to cope with the various stressors in their daily lives. Removing potential stressors can reduce stress; however, teaching people more effective coping strategies also can reduce stress, at least up to a point. Stress is what leads to strain, otherwise referred to here as psychological ill health.

Suicide Postvention Programs: These types of programs are aimed at reducing the future suicide risk of those exposed to a suicide of another person (e.g., first responders, family members, medical personnel). They are early intervention programs because they occur after exposure to a traumatic event (i.e., someone's suicide). Many feel that these are primary prevention programs.

Suicide Prevention Programs: These types of programs are often aimed at identifying at-risk individuals and get them help so as to avoid suicide. These interventions can have many, varied potential outcomes: reductions in suicidal ideation (i.e., thoughts about suicide), suicide attempts, and completed suicide. There are different ways to determine the effectiveness of these types of programs, with reductions over time in the same group to be the least powerful indicator; reductions compared to control groups or the general population are more powerful indices of program effectiveness.

Trauma: The American Psychiatric Association defines trauma in the current Diagnostic and Statistical Manual of Mental Disorders (DSM-V) as: "exposure to actual or threatened death, serious injury, or sexual violence" through "directly experiencing the event(s), witnessing, in person, the event(s) as it occurs to others, learning that the traumatic event(s) occurred to a close family member or close friend… [or] experiencing repeated extreme exposure to aversive details of the traumatic event(s) (e.g., first responders collecting human remains; police officers repeatedly exposed to details of child abuse)" (p. 271). Within the veteran and first responder research literature, there is often a distinction made between traumatic and potentially traumatic events. These two types of events can be the same; the distinction is made because not everyone reacts to them in the same way. That is, two people can experience the same situation, but one person can experience an adverse mental health condition, while the other person can experience either no reaction or a mild acute stress reaction.

Validity: This is when a program has been demonstrated, via rigorous scientific evaluation, to do what it says it is supposed to do. It is what is being tested when evaluators examine the effectiveness or efficacy of a given program. Validity is influenced by the quality of the evidence (see Evidence Grading). When the existing evidence is comprised of stronger methods, then there is greater confidence the program is valid.

CHAPTER ONE: INTRODUCTION, GOALS, AND APPROACH

INTRODUCTION

There is growing evidence suggesting that, compared to those in the general population, military veterans and first responders (police, firefighters, and emergency medical technicians [EMTs]/paramedics/ambulance personnel) are at greater risk for both mental ill health and suicide ideation/completion (e.g., Berger et al., 2012; Kleim & Westphal, 2011; Stanley et al., 2016). Furthermore, there is mounting evidence that this issue is being experienced in a number of different countries (e.g., Berger et al.). For the sake of this review, I will be focusing on five countries: Canada, Australia, New Zealand, Ireland, and the United Kingdom.

An exhaustive review of the existing literature examining the risk and prevalence of mental ill health and suicide among veterans and first responders in each of these countries is beyond the scope of this paper. However, in this chapter I will be providing a snapshot of the existing evidence for each.

Within Canada, a recent large scale study from the Canadian Institute of Public Safety Research and Treatment indicated that police, firefighters, and paramedics/ambulance personnel experience higher rates of PTSD, depression, anxiety, alcohol abuse, and suicide ideation than is found in comparable studies conducted with the Canadian general population (Carleton, Affifi et al., 2018a; 2018b). Moreover, there were wide variations in rates of mental ill health across first responder categories, with firefighters being the least at risk for most psychological problems and paramedics being the most at risk. Studies have shown similar findings in Canadian military veterans. That is, veterans tend to experience higher rates of mental ill health compared to non-veterans (Thompson et al., 2016). In addition, a records-based study conducted by Veterans Affairs Canada also revealed that, over a 38 year period, veterans were at greater risk of completed suicide compared to the general population (Van Til et al., 2018), though the generalizability of this latter point was disputed in a recent publication (Mahar et al., 2019).

In Australia, a new report commissioned by the non-profit organization Beyond Blue revealed that the rates of mental ill health and suicide ideation/planning across Australian police and emergency services personnel (including firefighters, paramedics/ambulance) were higher than the population averages (Lawrence et al., 2018). However, unlike in the Canadian study, the differences across occupational categories were not as consistent. Among Australian veterans, data have shown that that they report rates of mental ill health at substantially higher levels compared to a matched population sample (Forbes et al., 2016). They also have a greater risk of completed suicide (Australian Institute of Health and Welfare, 2017).

Similar studies, especially those with comparisons to mental ill health estimates in the general population, are harder to come by in the three remaining countries. This is true for both veterans and first responder groups.

In the United Kingdom, there is a fairly wide range of research exploring mental health issues in currently serving military members. For example, a study by Goodwin et al. (2019) showed that military personnel have approximately double the risk of experiencing a common mental health concern compared to those in the general UK population. However, what is lacking is research examining veteran's risks in the same way. Murphy et al. (2009) reviewed the general epidemiology of veteran mental health, but offered few specifics. Diehle et al. (2019) examined the mental health risks of veterans currently serving as reserve military. They noted that veteran reservists who had deployed during their military career were more likely to be

experiencing mental health concerns, compared to veteran reservists who had not deployed. Studies that offered a direct comparison between prevalence rates of veterans and the general population could not be found. While there is some limited empirical evidence showing the mental health burden or risk for first responders in the UK (e.g., Bennett et al., 2004), the overall ability to generalize across first responder groups and make comparisons to prevalence rates in the general population is not possible.

There is even less research focusing on mental health in Irish military veterans and first responders. The one study I was able to locate was a scoping study conducted by Fallon (2018), who surveyed members of the Irish Garda (i.e., the national police force) to assess the rate of probable PTSD. He noted that 16% of the sample reported probable PTSD based on the self-report measure used in his survey. While there are lots of data showing that those living in Northern Ireland have some of the highest rates of PTSD in the developed world (Kessler et al., 2017), I was unable to locate comparable population rates for the Republic of Ireland. First responder rates are likely higher than the population prevalence rates, but we don't know by how much and whether the rates are similar across all veteran and first responder groups.

No research reporting on the mental health burden of veterans and first responders, especially compared to the general population, could be found for New Zealand. The New Zealand government does report some mental health prevalence information on their website (e.g., http://archive.stats.govt.nz/browse_for_stats/snapshots-of-nz/nz-social-indicators/Home/Health/prevalence-psych-distress.aspx), but does not break it down by occupational category.

In addition to a focus on the impact of work stress and potential trauma on the health and well-being of veterans and first responders, this scoping review will try to identify programs aimed at their families. As such, it is important to identify research examining the mental health risks of veteran and first responder family members, compared to both the workers themselves and the general population. These data, however, are not readily available. Diehle et al. (2016) conducted a review of studies looking at PTSD and partners of veterans and found a wide variety of secondary trauma rates across samples of spouses. However, they also found no evidence of psychological concerns amongst children of veterans. Another study found high rates of depression, anxiety, probable PTSD, and alcohol abuse in a small sample of veterans' partners (Murphy et al., 2016).

GOALS AND APPROACH TO THIS REVIEW

While the research base for the prevalence of mental ill health and suicide risk among veterans and first responders is stronger in some countries than in others, there has been an increasing awareness of these risks among the workers themselves, their leaders and managers, their unions, politicians, and the general public. There is an increasingly loud call for prevention programs or some other way to ameliorate the risks associated with their previous or current employment. With that in mind, the purpose of this scoping review is to identify the broad range of mental ill health prevention and early intervention programs, as well as the suicide prevention programs, being used by veteran and first responder groups and organizations. Wherever possible, I also will identify any programs aimed at the families of veterans and first responders.

Interventions such as these are often used in public health and health promotion circles as a way of managing the mental health of at-risk groups. Programs aimed at preventing mental ill health often follow a primary prevention model, mainly by giving people the skills to cope effectively with workplace stressors and traumatic events (i.e., so-called "resilience training") in the hopes that these skills will help to inoculate people from the adverse effects of hazardous workplace experiences. When programs are aimed at early intervention (often referred to as crisis intervention in first responder communities), they can take a primary,

secondary, or tertiary prevention approach. An example of secondary prevention would be regular monitoring of staff to determine their levels of psychological well-being, whereas an example of tertiary prevention would be working to get affected employees into treatment as soon as possible (e.g., stigma reduction programs are typically aimed at this, even though the evidence that stigma reduction programs improve treatment-seeking behavior is limited; Clement et al., 2015).

There is a debate, however, as to whether prevention programs conducted with first responders are even possible, and that most (if not all) prevention programs are really addressing early intervention. That is, the assumption behind prevention programs is that the employee has not yet experienced workplace stress or trauma and that giving them skills to help them cope effectively with those issues will help them avoid being diagnosed with a work-related mental health disorder during their careers.

However, most (if not all) mental ill health prevention programs are being delivered to serving members of the first responder community. These are not people who are untouched by work-related trauma and stress. A recent study by Carleton et al. (2019) examined exposure to potentially traumatic events in a large sample of Canadian public safety personnel (first responders, corrections workers, and dispatchers). Over 4000 participants in their study reported on how frequently they have experienced each of 16 different potentially traumatic events during the course of doing their jobs. Carleton et al. observed that the typical Canadian public safety worker had experienced 11 of those 16 potentially traumatic events. Moreover, when they asked them how frequently they had experienced each potentially traumatic event, the modal response was 11+ times per type of traumatic exposure. This means that the typical respondent in Carleton et al.'s study have experienced more than 120 traumatic events. In other words, public safety personnel are exposed to many different types of trauma as part of their job, and they experience each of those potentially traumatic events many, many times over.

Given the breadth and frequency of exposure to trauma events, not to mention the potential impact of non-traumatic operational and organizational workplace stressors (e.g., McCreary, Cramm et al., 2018; McCreary, Groll et al., 2018; Taillieu et al., 2018), it is likely that the only truly mental ill health prevention programs are those that are taught during basic training (or earlier) to become a first responder or a member of the military. However, this distinction is merely something to think about and discuss. For the purposes of this paper, I will treat programs as a function of their stated goals (i.e., prevention or early intervention).

With that in mind, the overall goals of this scoping review are as follows:

1. Identify the general types of mental ill health prevention, mental ill health early intervention, and suicide prevention programs used by first responder (i.e., police, firefighter, and paramedic/emergency medical technician/ambulance) and military veteran communities in Canada, Australia, New Zealand, Ireland, and the United Kingdom.
2. Identify similar programs aimed at the families of first responders and military veterans in the same regions.
3. Once the main program types are identified, conduct a review of the available evidence supporting their efficacy and effectiveness.
4. Summarize the available evidence, identifying some potentially promising programs for both employees and families.
5. Identify potential gaps in the first responder and military veteran (including families) mental ill health prevention, suicide prevention, and early intervention program spaces.

The goal here is not to conduct a detailed survey or census of all programs being used in every veteran and first responder organization in each of these five countries, but to conduct an environmental scan of what is out there and what the evidence says about their effectiveness.

To address these goals, a three-pronged approach was taken. The first approach was to identify the existing academic (i.e. peer-reviewed) and grey (non-peer-reviewed) scientific research supporting prevention and early intervention programs, both in the general workforce (where applicable) and in veteran and first responder organizations. This will provide an understanding of the current level of known evidence about the existing programs. See Chapter 2 for this review.

The second approach was to identify and interview a series of Subject Matter Experts (SMEs) in each country. The SMEs came from a wide variety of backgrounds. Some were academic specialists or consultants in veteran or first responder mental health prevention or early intervention, suicide prevention, or family mental health. Other SMEs worked either for governmental organizations (e.g., Ministry of Defence), non-governmental organizations, such as charities or not-for-profits, or were clinicians providing support and treatment. Finally, some SMEs worked for first responder agencies themselves, either as an operational member, manager, or civilian worker. The SMEs were asked about their knowledge the programs being used in the targeted groups, as well as their perceptions of what knowledge is missing (i.e., gaps in programs and their implementation). The information gathered here will be important in three ways: (1) it will help identify the types of programs being used; (2) it will help identify some specific programs in use; and (3) it will help to determine whether organizations are collecting robust evidence of program validity. See Chapter 3 for this component of the scoping review.

The third approach was to explore Google and three social media sites (LinkedIn, Twitter, and Facebook) to find additional program information. I chose to limit this part of the scoping review to documents and posts from the five countries included in this review: Canada, Australia, New Zealand, Ireland, and the United Kingdom. For Google searches, a series of search terms highlighting veterans, first responders, mental health prevention, mental health early intervention, suicide prevention, and families were used. For social media sites, similar terms were used to search for information on open Facebook and LinkedIn pages, as well as for Twitter hashtags used to follow veteran and first responder mental health and suicide risk issues and concerns. More details about this aspect of the scoping review can be found in Chapter 4.

At the end of each of these chapters, I will provide a brief summary of my findings and, for Chapters 2 and 3, identify any gaps. For Chapter 2, the gaps will be focused on my reading and understanding of the content covered in the chapter. For Chapter 3, the gaps will be those identified by the subject matter experts. No gaps will be identified in Chapter 4.

Finally, I will provide a general summary and a set of general recommendations for veterans and first responder organizations. These recommendations will be based on the gaps identified throughout the review and can be found in Chapter 5.

CHAPTER TWO: LITERATURE REVIEW

In this chapter, I explore the existing academic (peer-reviewed) and grey (non-peer-reviewed) scientific literatures to examine the current state of evidence supporting the validity of workplace mental ill health prevention and early intervention, as well as suicide prevention programs. For mental ill health and suicide prevention programs, I will begin by exploring the evidence in the general workforce before moving my focus to veteran and first responder groups. For the early intervention programs, the focus will be mainly on first responders. I will also highlight any programs targeting the families of veterans and first responders. For the review provided in this chapter, there is no geographic restriction, though emphasis will be given to studies originating in Canada, Australia, New Zealand, Ireland, and the UK. The reason for this is that, if something has been shown to be effective outside of the five main countries covered in this report, it would be important to note this and determine whether it could work within these countries.

These types of programs are not created and implemented in a social vacuum. One of the key drivers behind these programs can be found in the many national standards or guidelines focusing on managing psychological safety in the workplace. With this in mind, I will review those standards and guidelines first, before summarizing the current state of the research.

THE BROADER CONTEXT: STANDARDS AND GUIDELINES FOR PSYCHOLOGICAL HEALTH AND SAFETY IN THE WORKPLACE

Many countries and regions have developed and implemented standards or guidelines for psychological safety in the workplace. In some cases these standards are mandatory (e.g., the European Union, including the UK and Ireland), while in other countries the standards are voluntary (e.g., Canada, Australia).

At first glance, these standards and guidelines appear to be more directly relevant to the first responder communities, rather than military veterans. However, given that veterans may work in a wide variety of occupations after leaving the military, they will ultimately have an impact on them as well. But when we consider the day-to-day levels of workplace stress and exposure to potential trauma, we do need to pay special attention to first responders. This section will explore the standards and guidelines in general, and then address their potential applications in first responder communities.

THE STANDARDS AND GUIDELINES

The Canadian standards for psychological health and safety in the workplace (Canadian Standards Association, 2013) were first created in 2013 and later reaffirmed in 2018. They provide a good overview of what organizations can and should be doing to protect the mental well-being of their employees. There are three aspects to the Canadian standards that are important here: (1) the hazards and risks identified in the document are known to cause poor mental health in the workplace; (2) there is a focus on risk identification and mitigation; and (3) they discuss the importance of preventing adverse psychological outcomes, not just reacting to them. These three elements of the Canadian standards are summarized in Table 2.1.

TABLE 2.1: ASPECTS OF CREATING AND MAINTAINING A PSYCHOLOGICALLY HEALTHY WORKPLACE BASED ON THE ORGANIZING PRINCIPLES WITHIN THE NATIONAL STANDARD OF CANADA (CAN/CSA-Z1003-13/BNQ 9700-803/2013; REAFFIRMED IN 2018)

Known Psychological Hazards and Risks	Risk Mitigation Processes	Prevention Elements
Lack of psychological support in the workplace	Identify the presence and extent of known hazards and risks	Eliminate the hazards
Poor organizational culture	Eliminate the hazards and risks that can be eliminated	Implement controls to reduce risks
Lack of clear leadership and expectations	Assess the risk to workers for those hazards and risks that cannot be eliminated	Implement use of Personal Protective Equipment (if the situation allows)
Workplace incivility and lack of respect	Implement protective and preventive measures to eliminate the remaining hazards and risks	Implement processes to respond to psychologically unsafe experiences that can have a negative psychological impact on the worker
High levels of psychological work demands	Prioritize the remaining hazards and risks for elimination and control	Offer appropriate resources to workers who are experiencing work-related psychological concerns
Low levels of growth and career development		
Low levels of staff recognition and reward		
Low levels of involvement and influence		
Poor levels of workload management		
Low levels of work engagement		
Poor work-life balance		

Low levels of psychological protections from violence, bullying, and harassment Low levels of physical safety and protection Other chronic stressors as identified by workers		

All of the known workplace risks and hazards identified in the Canadian standards (column 1 in Table 2.1) have sufficient data supporting the notion that they can cause poor mental health among those experiencing them. These findings have come from decades of work in occupational health psychology (i.e., the branch of psychology that studies job stressors and the impact they have on the health and psychological well-being of employees and their families) and allied disciplines. For example, numerous studies have explored the impact of various job stressors on employees' psychological health. Although many of those have focused on job-related burnout (which has only recently been considered by the World Health Organization as a mental health syndrome) as the psychological outcome, other studies have examined traditional mental health symptoms, such as psychological distress, depression, and anxiety. A meta-analytic review analysing data from more than 25 studies showed that greater job demands were associated with higher levels of depression, job strain, fatigue, and psychological distress, as well as reduced levels of overall well-being (Bowling et al., 2015). Other research has shown that increases in job demands and reductions in job control both were associated with increases in psychological distress over time (Elovainio et al., 2015).

A recent case study of more than 40 organizations implementing the Canadian standards for psychological health and safety in the workplace has shown that they can be an effective tool to get organizations working towards a healthier outcome for their employees (Mental Health Commission of Canada, 2017). There were, however, barriers to overcome (e.g., inconsistent leadership support; access to appropriate health data; uncertainty about how excessive stress can or should be defined), and the process is not always an easy one.

The approach outlined in the Canadian standards document, especially the focus on risk mitigation, known risks, and prevention, can be found in similar documents from many of the other countries included in this scoping review. Safe Work Australia (2019) just released a set of national guidance materials that includes a four step process to managing psychological safety in the workplace. Their guidelines focus on identifying psychosocial hazards, assessing the risks to employees, controlling the risks, and reviewing or evaluating the control measures to be sure they are working. The Safe Work Australia guidelines also focus on the importance of early intervention and supporting workers in their recovery. While the Australian guidelines recognized many of the same hazards and risks identified in the Canadian standards document, they did include two additional hazards that are relevant to veterans and first responders: remote or isolated work and violent or traumatic events.

Work Safe New Zealand has a set of general guidelines on psychological stress in the workplace (https://worksafe.govt.nz/topic-and-industry/work-related-health/work-related-health-updates/health-isnt-just-physical/). They note that, while workplace safety regulations have typically been understood to addresses physical health and safety, employers are also required to protect the psychological safety of their staff. Their webpage, however, is vague on the psychological risks in the workplace, highlighting only fatigue

and work demands. There also is no real breadth or significant focus on risk identification, risk mitigation, or prevention.

Ireland does not appear to have an explicit set of national guidelines for workplace psychological safety. However, as a member of the European Union (EU), it is likely that the EU mandatory guidelines would apply. The specific EU guidelines documents created for Ireland can be found at https://osha.europa.eu/en/tools-and-publications/e-guide-managing-stress-and-psychosocial-risks. The EU guidelines provide a similar array of workplace hazards and risks to the ones discussed already, while also identifying a series of actions employers can take to mitigate those risks. These risk mitigation strategies include: raising awareness, managing the risks via assessment, and managing the risks via taking action (i.e., prevention and corrective action). In regard to prevention, the EU guidance document focuses employers on prevention in the following areas: excessive demands, lack of personal control, inadequate support, poor relationships (including harassment), role conflict or lack of clarity, poor change management, and third party violence.

Within the UK, the Health and Safety Executive (HSE) has created a set of mandatory standards for managing workplace stress (http://www.hse.gov.uk/stress/standards/index.htm). The standards overlap extensively with the EU ones, which is expected since they were drafted while the UK was an EU member state[1]. Within these guidelines, employers are required to conduct a risk assessment and act on it. Elements of risk included in the work stress standard include: high job demands; poor job control; inadequate support; negative relationships; low role clarity and high role conflict; and ineffective change management practices.

As can be seen, most of these approaches are organizationally situated and reflect a broader focus on workplace stress beyond traumatic and potentially traumatic events. This is an important point to bring up because the discussion around mental health and suicide in veterans and first responder groups, as well as their families, is primarily focused on the experience of workplace trauma and its relationship to PTSD. Given the strong evidence base supporting the causal effects of the stressors identified in the various workplace standards, these components should not be excluded from the discussion of veteran and first responder mental health (e.g., Beyond Blue, 2016; LaMontagne et al., 2016).

Some may argue that most of the current standards or guidelines for psychological safety in the workplace are overly generic and may not capture the breadth of risks and hazards in occupations where there is greater exposure to traumatic or potentially traumatic events. For example, the Canadian standards document does not address violence or trauma in the way the Australian guidelines include workplace exposure to violence and trauma, or how the EU standards address third party violence.

To that end, the Canadian Standards Association has created a version of the national workplace psychological health and safety standards for paramedic organizations (Canadian Standards Association, 2018). The document is very similar to the original 2013/2018 psychological standards document, with minor changes. First, the authors added "cumulative exposure to critical or stressful events" to the list of potential hazards that employers should help guard against. The paramedic standard also has specific interpretations for paramedic organizations; for example, they highlight how mental health stigma is a major concern within paramedic organizations (e.g., stigma against working with a colleague who is coping with a mental health concern) and needs to be addressed. These paramedic-specific issues are not limited to Canada. A recent report from the Movember Foundation, Turning Point, and Beyond Blue, for instance, highlights Australian

[1] This scoping review was conducted in mid-2019 when the UK was in the process of leaving the EU. It is unknown how this transition will affect the state's standards or guidance around psychological safety in the workplace.

paramedic's mental health stigma and how it can affect how they deal with both their colleagues and their clients who may be experiencing mental health concerns (McCann et al., 2018; Turning Point, 2019).

The Canadian paramedic standard for workplace psychological health and safety is the only set of official guidelines I know of that is specifically targeting first-responders, public safety personnel, or military veterans. The Australian not-for-profit organization, Beyond Blue, has created a good practices framework for first responder organizations to follow (Beyond Blue, 2016), but it is not known how many organizations are using it. Like the other guidance documents, the Beyond Blue framework emphasizes taking an integrated approach to creating psychological safety in the workplace (protection, promotion, and intervention). The framework also focuses on a career approach (from initial training to transition out of the services) and the importance of families. Their five key action areas address the ways in which first responder organizations can expect to build mentally healthy workplaces and employees. These actions are:

1. Adopt a systematic approach to risk management (e.g., consider organizational, operational, environmental, and individual stressors, not just trauma exposure).
2. Develop and implement a mental health and well-being strategy (e.g., be sure to conduct regular evaluations of all interventions put in place to promote the implementation of the strategy).
3. Develop leadership capability (e.g., provide training to be sure managers and leaders have the appropriate skills to assist someone having mental health difficulties).
4. Take action to reduce stigma (e.g., support workers with mental health concerns).
5. Educate and prepare your workforce (e.g., mental health education and awareness training).

A recent international review of workplace mental health guidelines has noted a wide variety in their quality and comprehensiveness, with many documents found wanting on one or both levels. As Memesh et al. (2017) note, the most comprehensive guidelines balance their risk mitigation strategies, emphasizing the responsibilities of both the organizations and their employees. However, several guidance documents focus their suggested interventions mostly (or solely) on individual employees rather than balancing the individual and the organizational elements. This runs counter to scientific evidence which *"... indicates that the most effective way to prevent, manage and protect employee mental health problems is via interventions designed to target both individual, employee-level and organisational level factors (e.g., leadership styles, workplace climate or culture)"* (Memesh et al., p. 219).

IMPLEMENTING THE STANDARDS AND GUIDELINES

Many first responder organizations do not appear to have any outward facing guidelines or strategies for how they plan on implementing national standards or guidelines for managing the psychological health of their front-line employees. This does not mean that the documents do not exist, just that they are not available outside the organization. Only a few organizations seem to have published these types of strategies for others to see. Having these types of documents publicly available is important because they serve as an important resource for a wide range of interested parties, from potential employees to governments and charitable organizations to researchers and policy analysts.

The following three examples from Australia serve to give readers an idea of how organizations are thinking about implementing their national guidelines:

- Mental Health and Wellbeing Strategy for First Responder Organizations in NSW (https://nswmentalhealthcommission.com.au/mental-health-and-wellbeing-strategy-for-first-responder-organisations-in-nsw)

- Victoria Ambulance Mental Health and Wellbeing Strategy 2016-19 (https://www.ambulance.vic.gov.au/wp-content/uploads/2016/10/ambulance-victoria-mental-health-strategy-2016-19.pdf)
- Victoria Police Mental Health Strategy and Wellbeing Action Plan 2017-2020 (https://www.police.vic.gov.au/mental-health-strategy)

In addition to these documents, some organizations have sought an independent, external review of their mental health policies and culture. I was able to identify two such external reviews, both from Australian policing organizations.

Cotton et al. (2016) conducted a review of the mental health and well-being of members of the Victoria Police. Their report highlighted that, while operational exposures to traumatic or potentially traumatic events are a concern, there is a need to develop a better understanding of how non-traumatic operational and organizational stressors impact the mental health of serving members. Cotton and his colleagues noted that these non-traumatic stressors, many of which are reflected in the Australian workplace safety guidelines and the other international standards documents I described earlier, can have significant direct impacts on the health and well-being of police officers. They also can have many indirect impacts on employee health, including mediating the association between trauma exposure and adverse mental health outcomes.

Similar concerns emerged from an external review of the Australian Federal Police (AFP) led by Phoenix Australia (2018). They conducted a review of the AFP's policies and procedures, as well as carried out a general survey of the workplace stressors and psychological well-being in a sample of AFP members. Their report highlighted the need for a series of structural changes to be made within the organization (e.g., revising the AFP's mental health strategic plan, monitoring staff mental health and well-being, better engagement with families). Moreover, these recommendations were prioritized, with each being given a time-frame within which the organization should begin implementing the recommendation (i.e., within 1 year, 1-2 years, 3-5 years). The Australian National Audit Office (2018) repeated many of the concerns raised by the Phoenix Australia Report.

Using data from their workplace well-being survey, Phoenix Australia (2018) also built on the notion of differentiating traumatic from non-traumatic workplace stressors, emphasizing the importance of both on the mental health of first responders. They noted that AFP members were experiencing relatively high levels of non-traumatic operational and organizational stress. The Phoenix Australia researchers employed two commonly used self-report questionnaires (i.e., the Operational and Organizational Police Stress Questionnaires; McCreary & Thompson, 2006; McCreary et al., 2017) to identify the most important non-traumatic stressors experienced by AFP members. With this study, Phoenix Australia provided important information for managers, as well as the basis for benchmarking non-traumatic stressors within the workplace and the potential to make comparisons with other first responder organizations (e.g., McCreary, Cramm et al., 2018; McCreary, Groll et al., 2018; McCreary et al., 2017; Taillieu et al., 2018).

PREVENTION VS. EARLY INTERVENTION IN THE GUIDANCE DOCUMENTS

Workplace standards and guidance documents for psychological safety are often perceived only as a way of preventing workplace stress. However, these documents also stress the importance of early intervention: identifying mental health concerns when they arise, supporting those who experience adverse events, getting people into treatment as soon as possible, and intervening in situations where there has been exposure to potentially troubling situations (i.e., crisis management). For example, the Canadian standards document (Canadian Standards Association, 2013) makes reference to critical event preparedness (sections 4.4.7 and 4.4.8), with separate sections focusing on critical events for the individual and organization. With regard to individual exposure, section 4.4.7 notes that organizations should (a) identify critical events, (b)

provide response and support to the affected individuals, (c) provide training to the key personnel involved, and (d) be sure there are options available for debriefing and changes to the critical event response.

There are similar approaches to early intervention outlined in many of the other guidance documents, as well. The Australian guidelines focus on the importance of a broad range of managerial support to create systems for identifying when an incident has occurred and ways to develop and maintain a culture of support within the organization. The EU standards address issues around taking corrective actions. These include encouraging reporting of psychologically adverse events, responding right away, providing confidentiality when needed, and taking action to address the problem.

WHERE DOES SUICIDE PREVENTION FIT INTO THE STANDARDS OR GUIDANCE DOCUMENTS?

It is important to note that, while the research and discussion in this section has been focused on psychological health and safety in the workplace, as well as some of the relatively unique conditions faced by first responder groups, there is comparatively little discussion of suicide prevention in the existing standards or guidelines. When suicide is discussed in these documents, it is often seen as an outcome of poor mental health. The assumption appears to be that all suicides are caused by poor mental health and that reducing mental health symptoms will cause an equivalent reduction in suicide ideation, attempts, and completion.

However, there is growing contention with this view. For example, Pridmore (2015) has argued that the methodologies used to determine whether someone who completes suicide was experiencing poor mental health (e.g., psychological autopsies) are flawed. Pridmore also argues that, if poor mental health was the main reason for suicide, the variation in suicide rates between and within countries would be the same as the variation in rates of mental ill health. This is not the case, and Pridmore reviews data suggesting that only about 50% of suicides can be attributable to mental ill health.

Similar conclusions can be drawn from a recent paper by Ribeiro et al. (2018). They conducted a meta-analysis of longitudinal studies examining the relationship between depression and hopelessness on the one hand, and suicide ideation, attempts, and completion on the other. The 166 studies included in the review were conducted between 1971 and 2014. Using this strong scientific method, Ribeiro et al. found that increases in depression and hopelessness were significantly predictive of increased risks for suicide ideation, attempts, and completion. However, the associations between depression and suicide completion were not as strong as most people believe them to be. That is, a diagnosis of depression was most strongly associated with suicide ideation (OR = 2.48), slightly less so for suicide attempts (2.38), and even smaller still for completed suicide (1.50). This means, for example, that a diagnosis of depression is associated with a 50% increase in risk of dying by suicide compared to a person without a diagnosis of depression. However, when the unit of measurement was the degree of depression symptoms rather than a yes/no diagnosis, Ribeiro et al. showed that depression symptoms do not predict suicide completion. For information purposes, the population rates of suicide, per country, are approximately 8.2/100,000 (Australia), 11.7/100,000 (New Zealand), 11.3/100,000 (Canada), 11.8/100,000 (Ireland), and 6.9/100,000 (UK) (Värnick, 2012).

Given the current discussion around the extent to which suicide is caused solely by poor mental health, if suicide prevention is part of an organization’s plan for a psychologically safe workplace, they may want to consider addressing other potential causes of suicide. For example, the concept of psychological or mental pain, which is distinct from depression, has been shown to be an important element of suicide (Verroccho et al., 2016). As Verrocchio et al. noted, psychological or mental pain …

... encompasses shame, guilt, humiliation, loneliness, fear, angst, and dread ... Orbach et al. [2003] have described nine [sic] dimensions of mental pain: lack of control, irreversibility of pain, emotional flooding, estrangement, emotional flooding, confusion, social distancing, and emptiness.

This is just one example of a potential direction. The point I am trying to make here is that researchers and theorists are still trying to understand the causes of suicide. However, it is clear that depression and mental ill health are not the sole causes. With this in mind, high risk organizations may need separate strategies and programs for identifying and managing suicide risk and mental ill health in the workplace. The World Health Organization (2006) has published some guidance for those wanting to know more about suicide prevention in the workplace, which is a start.

PAST RESEARCH – OVERVIEW

Most standards and guidelines emphasize the importance for organizations to change their structures to reduce and prevent the psychological burden on employees (e.g., shift-work, work overload, role confusion, excessive job demands, and poor job control all are known causes of poor mental health). This approach is supported by decades of evidence showing that the risk factors identified in the standards and guidelines can have large, adverse impacts on the psychological health of workers. However, most organizations tend not to engage in any systematic attempts to improve the ways in which they are harming employees' mental health. In fact, organizations will often exacerbate known causes of poor workplace mental health (e.g., adopting a "do more with less" attitude, adding additional work roles to individuals, and expecting overtime and shiftwork).

Most organizations place the burden of mental ill health prevention on the individual workers. Rather than change themselves, many organizations attempt to enhance workers' psychological well-being and resilience, which is the ability to cope more effectively with workplace stressors. The assumption is that, by making workers more resilient to workplace stress and potential trauma, they will reduce the likelihood that workers will develop a psychological disorder. This will, in turn, reduce the organization's overall burden to manage work-related mental illness and potentially reduce costs associated with poor mental health in the workplace (e.g., Employee Assistance Program costs).

To that end, there is a growing scientific literature describing programs designed to improve employee well-being and overall mental health. However, very little of that research has systematically explored the effectiveness (i.e., the validity) of those mental ill health prevention programs, especially within first responder organizations. The next few sections will examine the past research in the three core areas of this report (mental ill health prevention, mental ill health early intervention, and suicide prevention).

For each core area, I will examine the extant research describing the programs used in general workplace contexts (where appropriate), as well as the available evidence for their validity, before focusing on existing applications to the veteran and first responder spaces. Whenever possible, strong forms of evidence (e.g., systematic reviews and meta-analyses) will be used to summarize the validity of general or specific programs. This is because weaker forms of evidence (e.g., single studies with poorer methodological rigor, such as pre-post designs) are not very useful at describing the overall validity of these types of programs – they are more likely to magnify significant effects, making the results seem stronger than they really are. Multiple higher quality studies are ideally needed so that we (a) know that findings can be replicated across different groups and (b) have an indication of the range of effect sizes for the intervention.

PAST RESEARCH – MENTAL HEALTH PREVENTION IN THE WORKPLACE

This section will focus on programs designed for mental ill health prevention.

PREVENTION RESEARCH IN GENERAL WORKPLACES

Many workplace mental ill health prevention programs focus on helping to build an individual's capacity to cope successfully with adverse experiences (e.g., general stress, workplace stress, potential trauma). They often include psychoeducational elements (e.g., teaching people about the body's physiological reaction to stress; the differences between stress and a stressor; the range of responses to adverse experiences), as well as teaching participants various adaptive strategies, such as stress management techniques (e.g., mindfulness meditation, diaphragmatic breathing), coping strategies (e.g., goal- vs. emotion-focused coping, problem-solving), mental health literacy, and stigma reduction.

To better understand the content and processes inherent in these types of programs, Czabała et al. (2011) conducted a large, narrative review of 79 psychosocial workplace interventions. They found that most of these programs required participants to meet weekly and commit at least two hours per week to it (e.g., to practice previously taught skills). These programs typically lasted a little less than 16 weeks, suggesting there was a significant time commitment to the program.

Czabała et al. also identified six approaches that these types of programs adopted. They are described in Table 2.2.

TABLE 2.2: MAIN FOCII OF PSYCHOSOCIAL WORKPLACE MENTAL HEALTH PROMOTION AND PREVENTION PROGRAMS IDENTIFIED IN THE CZABAŁA ET AL. (2011) NARRATIVE REVIEW.

Intervention Focus (# studies)	Examples of Program Deliverables
Individual Stress & Coping Skills Training (35)	Psychoeducation around stress and how it works; teaching stress management skills, coping strategies, and improving communication.
Improving Individual Job Knowledge & Skills (13)	Training in skills and information specific to the job task via techniques, such as problem identification and problem solving.
Improving Working Conditions (6)	Changes to workplace conditions that previous researchers have shown adversely affect the health and well-being of employees (e.g., decreased workload, increased frequency or duration of breaks).
Providing Relaxation Skills to Employees (6)	Providing clinically-based relaxation training to employees (e.g., psychoeducation; teaching and practice; progressive muscle relaxation techniques; using music to relax).
Physical Exercise (2)	Providing physical exercise outlets and education around the benefits of physical exercise on psychological well-being.
Multi-component Intervention (17)	Combining elements of multiple program types into a larger program.

The overall goals or aims of these types of programs tended to vary; however, Czabała et al. (2011) identified five general aims:

- Reducing stress and improving people's ability to cope with stress (37% of interventions)
- Improving or maintain people's mental health (16% of interventions)
- Improving employee job satisfaction (18% of interventions)
- Improving job effectiveness (23% of interventions)
- Reducing rates of absenteeism, sick leave, and turnover (6% of interventions)

As can be seen, the first two aims are directly related to improving employee mental health. However, the last three aims are more indirect indicators of improved employee mental health, in that past research has shown that mental health is associated with each of these (e.g., Faragher et al., 2005). Thus, there are several ways a program can address employee mental health from a prevention perspective. Moreover, a single intervention can have multiple goals. But the question remains, are these programs effective (i.e., do they achieve the improvements they say they will achieve)?

This question has been addressed in several individual studies, and Vanhove et al. (2015) recently compiled those studies into a systematic review and meta-analysis. More specifically, Vanhove et al. examined the effectiveness of workplace mental ill health prevention programs, looking at three specific outcomes: mental health improvement, improvement in general well-being (e.g., subjective well-being, life satisfaction), and improvement in workplace performance by addressing employee mental ill health. They identified 37 studies that, when combined, comprised data from over 16,000 participants. Their findings suggested that, in most cases, these types of programs had minimal effects on the mental health and well-being of their participants.

However, Vanhove et al.'s (2015) review also identified five important factors that future program developers and evaluators need to consider.

- While there was a small, overall effect size for all three types of interventions within the first month after training ended, the effects diminished substantially, suggesting that any initial small gains that resulted from the mental health improvement interventions were lost in the longer term. Therefore, evaluations of workplace mental ill health programs should have multiple post-intervention assessments to track effects over time.
- Within the first month, the effects were largest for interventions designed to improve workplace performance and lowest for interventions designed to improve employee mental health.
- The effect of diminishing returns for mental health improvement programs tended to be reversed in situations where the intervention was targeted to at-risk groups (e.g., military members). That is, there was no real effect at the end of the first month, but after that month, participants achieved a small gain. However, it is not known for how long that small gain lasted.
- One-on-one training was more effective than classroom-based teaching, train-the-trainer approaches, and computer-based learning. The former approach had moderate effect sizes overall, meaning it was a relatively effective (though not very cost efficient) way of teaching people the necessary skills to improve their mental health in the face of stress or trauma. Of the latter three approaches, their effect sizes tended to range from small to very small, suggesting they were not very effective. However, Vanhove et al. (2015) did not compare the effects of these various teaching approaches across the two time points (< 1 month; > 1 month), so it is not known whether the moderate effects for the one-on-one training were maintained in the long-run.
- How people design their program's evaluation has an important impact on the effect sizes of their findings. Vanhove et al. (2015) compared findings from studies using a weaker pre-post method to those using stronger methods (e.g., RCT, Group RCT, comparison groups). They found that studies using a weaker method to assess the validity of the intervention reported larger overall effect sizes

compared to those using more rigorous approaches to their evaluation design. Therefore, if you want to make your program look more effective, use a weaker method. The corollary to that is that, if your program does not have any statistically significant findings when examined using a weaker pre-post method, then it likely will not demonstrate any significant effectiveness when using a stronger method of evaluation.

These findings are not surprising, and have been demonstrated in other meta-analytic reviews examining related questions. For example, Conley et al. (2015) conducted a meta-analysis of published and unpublished studies examining the effectiveness of mental ill health prevention programs developed for use with college and university students. They identified 103 interventions that met their inclusion criteria. Of those, 74% of the interventions were skills based (e.g., cognition monitoring, relaxation training, mindfulness, meditation, social skills), with the majority of the others focusing mostly on psychoeducation. Their analyses showed the following:

- The interventions yielded a small median effect size, overall. These were in line with the ones identified by Vanhove et al. (2015).
- When skills were being taught, it was important for there to be supervised practice. When students were supervised, the median effect size was moderate, but when there was no supervised practice, the effect size was practically zero.
- This trend (supervised vs. non-supervised practice) was found over a wide range of mental health outcomes (e.g., reduced depression, anxiety, stress, generalized distress, and social-emotional skills).
- Skills atrophied over time; at follow-up, the median effect size became a small effect size for supervised skills training and was still zero for non-supervised skills training.
- The method for testing effectiveness was a contributing factor. Studies that used a less rigorous design (e.g., a single group, pre-post design) found stronger effect sizes than studies that used the more rigorous randomized assignment approach (e.g., RCTs). Randomization studies are more likely to show the true potential of an intervention because they control for normal change over time and context.

In another meta-analysis, Bellón et al. (2019) sought to determine the effectiveness of psychological and educational interventions to reduce the risk of depression in the workplace. However, of the 69 studies they initially identified, only three met their inclusion criteria; the remaining 66 studies were too flawed in their research designs to provide an adequate assessment of program validity (e.g., the original studies did not exclude participants who had previously been diagnosed with depression). The three studies revealed a small average effect size, in line with the ones observed by Vanhove et al. (2015).

In summary, these large review papers, especially the meta-analysis by Vanhove et al. (2015), tell us that general workplace interventions designed to enhance employee mental health and general well-being tend not to be very effective (i.e., the median effect size tends to be small). In most cases the effects that appear right after the program is finished tend to diminish relatively quickly. In the one instance where the opposite seemed to be happening (i.e., when targeting at risk groups, such as those in the military), even though the effect size of the change in mental health symptoms increases, it is still a small effect size. Given that many interventions attempt to teach skills to participants, proper supervision of the skills training portion of the program appears to be an important, under-appreciated consideration (Conley et al., 2015). Finally, program validity studies that use weaker methods tend to have larger effects, inflating perceptions of their utility.

This brings to mind two questions: (1) How can we improve the programs to make them more relevant and cause more change? and (2) Is it worth the investment, given that one-on-one coaching and supervised practice seem to be the most effective for skill development? With regard to the latter question, we assume that, for individuals, if the programs are successful, there is a benefit in the form of improved quality of life.

However, what about the companies who pay for the program implementation? Hamberg-van Reenen et al. (2012) suggest that it might be worthwhile for them too. These authors conducted a series of economic analyses, looking at the cost-effectiveness and financial return on investment (ROI) for workplace mental health interventions. While the quality of the data in their analyses was poor (suggesting more rigorous data are needed to help answer this question), they found that there may be a small economic benefit to companies who provide prevention and intervention programs (it should be noted that Hamberg-van Reenen et al. did not separate prevention from treatment, so this distinction could hamper interpretation of their findings). However, the first question is often more problematic because this involves a dialogue between the researcher and the organizations in which people work, and often times the requirements to make the programs and their evaluations stronger (e.g., time off for employees, changes to work environments) cannot (or will not) be met by the organizations.

PREVENTION RESEARCH IN FIRST RESPONDERS

But what about workplace mental ill health prevention programs in first responder groups? What programs have been developed and implemented in these groups? Also, what evidence is there that these programs are effective (i.e., are they valid)? This is an underdeveloped research area. As Kleim & Westphal (2011) noted in their review of mental health in first responders:

"… in contrast to the extensive knowledge base of risk factors known to predict onset of PTSD, there are relatively limited empirical data on factors that may serve [as] protective functions in this population …. Such information is vital for the development of evidence-based prevention programs targeted at first responders." (p. 20)

There is a similar lack of knowledge about how best to teach these prevention skills to first responders.

What do we know about mental ill health prevention programs for first responders? The first thing is that knowledge of the interventions themselves (e.g., whether there are any, what are the desired outcomes, what are the various elements of the interventions) is sparse and mostly unavailable. Literature searches using common scientific databases (e.g., Google Scholar, PubMed, PsycINFO) reveal very little information about what programs are available and what programs are being used. Additionally, if there are any interventions being implemented among first responders, it is not known if there are any evaluations of their effectiveness, because reports of the evaluation findings are not being published outside of their own organizations. This leads to an information shortage. As a result, it restricts the development of narrative or systematic reviews and meta-analyses (i.e., stronger forms of evidence) demonstrating the validity of prevention programs in these occupational groups.

Although there are no systematic reviews or meta-analyses examining the effectiveness of mental ill health prevention programs in first responders, there have been some smaller scale studies published in peer-reviewed journals. These studies suggest that, like research on general workplace mental ill health prevention programs, the programs devised for first responders have not been helpful at reducing symptoms of poor mental health. In one paper, Arnetz et al. (2013) described the results of a small intervention focused at the primary prevention level. They developed a program designed to reduce the negative health impact of work-related stress amongst police by enhancing officers' sense of control over stress-provoking situations. There has been a substantial amount of research linking job control with employee stress, physical health, and psychological well-being (e.g., Elovainio et al., 2015; Häusser et al., 2010), so this intervention seemed appropriate. Participants received psychoeducation focusing on stress, adaptive coping, and the impact on physical and psychological health, as well as training in various clinical stress management tools (e.g., relaxation training, guided imagery for problem-solving). Arnetz et al. predicted that those who received the training would demonstrate better coping abilities in the face of stressful events, thereby blunting the

negative effects of work-related stress on their mental health. Compared to a control group, the intervention group did report better overall levels of exhaustion and general mental well-being. However, there was no assessment of symptoms for any specific types of mental ill health (e.g., depression, anxiety, PTSD, substance abuse), so it is not known if this would be an effective mental ill health prevention intervention.

Using a small sample of Australian firefighters, Skeffington et al. (2016) conducted a randomized control trial examining the effectiveness of 4 one-hour training sessions on PTSD symptoms one year later. The experimental group received psychoeducation about PTSD and its impact on psychological health, as well as training in cognitive restructuring (an element of cognitive behavior therapy), support seeking, and self-soothing. The control group received regular training. The study's findings indicated no beneficial effects of the intervention on the psychological health of the firefighters taking part.

Another intervention includes Steinkopf et al.'s (2016) behavioral health training for American firefighters, which was a single 45-minute session that included a general introduction to the program, and psychoeducation about five aspects of poor health and psychological well-being: stress, depression, sleep, substance use, and suicide. While the authors assessed general knowledge of the topic areas before and after the training session, as well as satisfaction with the program itself, there was no indication that the knowledge was retained. Nor was there any evidence that it had any impact on the physical or mental health of the participants who took the session.

Finally, Joyce et al. (2019) reported on the effects of an internet-based intervention (Resilience@Work) designed to improve resilience among first responders. In their study, 143 Australian firefighters were randomly assigned to either the intervention or control group. Those in the intervention group completed 6 online sessions of approximately 25 minutes each. The sessions were focused around improving mindfulness. Those in the control group received training in healthy living and their time commitment was the same as the intervention group's. Unfortunately, Joyce et al. did not measure the effects of this intervention on mental health outcomes. Rather, they measured changes in self-reported resilience. They found that those in the intervention group improved their degree of self-reported resilience more so than those in the control group. These findings cannot be used to support the program's effect as a mental ill health prevention program because resilience is not a mental health construct. Moreover, there is no scientifically agreed-upon definition of resilience (McCreary & Fikretoglu, 2014). Most theories of resilience identify it as a process within the individual that moderates the association between stress and psychological strain (i.e., mental ill health).

Thus, there does not appear to be much in terms of published mental ill health intervention studies in first responders. What has been published has either not shown any real effects on improving mental health outcomes, or has not measured those outcomes. There has been extensive domestic and international interest in a Canadian program, the Road to Mental Readiness (R2MR). As a result of that high degree of attention, combined with the fact that it was developed within a military context (and therefore relevant to veterans), I will describe the R2MR program in a separate section below.

PREVENTION RESEARCH IN VETERANS

A standard literature search failed to identify any mental ill health prevention programs for veterans[2]. There may be multiple reasons for this. First, once veterans release from the military, they often go their own way

[2] It should be noted that the term "veteran" can sometimes be confusing in the scientific literature. In the main target countries for this report, a veteran is someone who served in the military and has released into civilian life. However, there is also the term "combat veteran", which is commonly used in the United States. It refers to someone who has deployed to an active combat zone; they may or may not be still in the military.

and live relatively happy and rewarding second lives in the civilian world. In this scenario, they have no specific need for mental ill health prevention training tailored to veterans. Second, when veterans do need a more formal connection with veteran-focused organizations and programming, it may be in the context of a mental health crisis and treatment seeking setting.

A third scenario is that primary prevention programs for veterans do not exist because people feel that, since many veterans received some form of mental health education as part of their military service, there is no need for any ongoing prevention support. Mental health education as part of military training was not always the case, but with the advent of the post-2001 conflicts in Iraq and Afghanistan, many military organizations have developed primary prevention-focused interventions to give their members better ways of coping with the stressors and potentially traumatic events they might be exposed to on deployments. The initial focus was on concepts like stress inoculation and mental readiness training (Thompson & McCreary, 2006), where the primary goal was to improve task performance by mitigating the negative effects excessive stress is known to have. Later in the conflict, the focus changed to supporting the mental health of deployed personnel, especially combat personnel. For these types of programs, there was typically some form of pre-deployment training with additional post-deployment training in some, but not all cases.

Different organizations created different programs. A comprehensive review of these programs is beyond the scope of this report. However, for those interested in this topic, I recommend reading one or more of the following review papers:

- Fertout et al. (2011). These authors reviewed a series of primary prevention-focused, post-deployment mental health interventions adopted by the UK Armed Forces. They refer to this as post-operational stress management. While it is arguable whether this focus falls under the prevention or early intervention rubric, the authors do conceptualize this as a review of primary prevention programs. Thus, I will include it here. The authors identified two larger programs, including:
    - Third location decompression (this was first used by the Canadian Armed Forces in 2006 and adopted by the UK afterwards[3]);
    - Battlemind, a program developed for the US Army by the Walter Reed Army Institute of Research to address transition-related stress and distress, especially after returning home from a deployment (Adler, Bliese, McGurk, Hoge, & Castro, 2009; Castro, Hoge, & Cox, 2006). Though Battlemind was developed for US Army use, it was adopted and adapted for use by Canadian, British, and other Armed Forces;
- Hourani et al. (2011). These authors reviewed programs designed to prevent PTSD in military members. They noted that most programs focused on either psychoeducational material or skills training. They noted that there were few evaluations of the overall effectiveness of these programs, and when there was an evaluation, it tended to be of poorer quality. Furthermore, little evidence of effectiveness has emerged for any of the programs identified here. Specific programs mentioned by Hourani et al. include:

The confusion arises when some researchers (especially those based in the United States) refer to their study populations as “veterans” because they have returned from a combat-focused deployment, even though they are still active duty military personnel. It makes it difficult for reviewers to know what the original authors mean (i.e., have they released or are they still serving). The focus of this report is on those who have released from military service.

[3] Canadian Armed Forces Third Location Decompression was held in Cyprus, starting in 2006. It was a 5-day process, with two half-day sessions devoted to mental health interventions (e.g., a Canadian version of the US Battlemind program, plus various psychoeducation modules, such as reintegration stress and anger management). For the sake of transparency, I wish to note that I was a non-clinical member of the mental health component’s organizing team.

    - Battlemind
    - Marine Corps Combat and Operational Stress (COCS) Program
    - UK Royal Navy and Royal Marines pre-deployment stress education program
    - Stress-inoculation training
- Skeffington et al. (2014). These authors conducted a systematic review of programs designed to prevent PTSD. Only seven studies met their inclusion criteria, and none of those met the more stringent guidelines for inclusion set out by the Cochrane Collaboration. The interventions in the studies they reviewed fell into three general categories: psychoeducation only, psychoeducation plus skills training, and training prior to receiving a simulated experience (vs. a real-life experience). Military samples were found only for the psychoeducation interventions, and neither study showed a significant program impact.

One area that looks promising for preventing mental ill health in veterans is that of military-civilian transition. Transition from a military career to a civilian life can be stressful for some formerly serving members (Shields et al., 2016). The large scale Life After Service Study (LASS) of Canadian veterans led by Veterans Affairs Canada (Maclean et al., 2014) noted that, overall, approximately 25% of former Canadian Armed Forces (CAF) members experienced difficulties adjusting to life after service. That rate varied, however, as a function of various demographic and health-related factors. For example, those who released from the military during the middle of their career tended to have more problems adjusting, as did veterans who deployed multiple times during their careers. Those who released for medical reasons also had significantly higher adjustment problems. Other groups who reported higher than average difficulties in adjustment include those who self-reported their health as poor or fair.

Additional research from the LASS shows that CAF veterans are more likely than the Canadian general population to experience a wide range of chronic physical disorders (e.g., musculoskeletal, cardiovascular, pain, diabetes), and that many of those with these conditions also experienced comorbid mental health symptoms (Rebeira et al., 2015). Whether those mental health symptoms were caused by coping with chronic health conditions, or emerged independently as a result of coping with chronic illness in a civilian medical system is unknown, but other research studying poor mental health in veterans suggest that specific aspects of service itself may not be a huge factor (Rebeira et al., 2017). These issues may adversely affect the transition to civilian life, as well as reduce quality of life after transition.

One additional, and potentially important, factor that appears to contribute to a poor transition from military to civilian life is having a strong military identity. Those with strong ties to the military tend to have weak existing connections to the civilian world, and research from the LASS shows that these weak social connections are strongly associated with increased post-release psychological distress and suicidality (Thompson et al., 2019).

Bauer et al. (2018) conducted a systematic review of programs designed to prevent adverse mental health outcomes in veterans transitioning to civilian life. Unfortunately, most of the studies they reviewed confused the term combat veteran with veteran, and several of the studies in their review contained samples of currently serving military members who were recruited as they returned home from an overseas deployment. Thus, the majority of the studies were addressing the needs of current serving military members, not those transitioning out of the military. For those studies that did examine members leaving service, they noted that there might be a beneficial effect from some, but not all programs. For example, an intervention based on cognitive behavior therapy and acceptance and commitment therapy principles did have some effect at reducing depression and distress among those transitioning to civilian life (Tenhula et al., 2014).

The Canadian LASS is helpful in that it provides information about perceived quality of transition. But it is limited in that it does not quantify the baseline levels stress and distress. There is also limited understanding

of how this varies across the five countries in this scoping review (e.g., Daraganova et al., 2018; Van Hooff et al., 2018). Without this kind of information, it is difficult to determine the best elements for primary prevention programs. The assumption is that these programs would focus on veterans transitioning without a diagnosed mental health disorder. In other words, the programs are not focused on secondary or tertiary health prevention. Rather, the focus would be on mitigating the stress associated with transition in a way that would maximize transition success, setting up the veterans and their families for future success.

There are two other issues that need to be considered when discussing veteran mental ill health prevention. The first is the difference between regular force and reserve personnel. There is very little discussion on the health and well-being of reserve force personnel, especially once they leave the military (e.g., Diehle et al., 2019). The experiences of reservists can be varied. Depending on the country and the trade within the reserve force itself, many reservists will have never deployed with a regular force unit. Other reservists may have been called to duty for civil emergencies, but never been deployed overseas. As such, we know very little about the transition to a non-military status among reservists.

The second issue is the fact that a lot of research and discussion of military and veteran mental health is skewed towards combat personnel. The combat arms are typically viewed as the pointy end of the sword and, as such, are smaller in size than the rest of the deployed organizational elements. And their deployment-related experiences may continue to impact their lives after leaving service. For example, as noted earlier, Diehle et al. (2019) showed that having deployed on a combat mission was a significant predictor of experiencing poor mental health as a veteran. The LASS study showed similar findings (Maclean et al., 2014). Other researchers have shown that veterans with sustained physical injuries (e.g., amputation, hearing loss, musculoskeletal problems) had a greater risk of experiencing poor mental health (Stevelink et al. 2015). A recent study by Williamson, Greenberg, and Murphy (2019) suggested that moral injury ("perpetrating, failing to prevent, bearing witness to, or learning about acts that transgress deeply held moral beliefs and expectations," Litz et al., 2009, p. 700) might also be a significant deployment-related risk factor adversely affecting veteran mental health.

But by focusing only on personnel who have experienced combat (or been exposed to combat), researchers and policy/program developers are missing out on other groups of potentially at-risk veterans. Some combat support personnel (e.g., medics, forward air controllers, convoy drivers, medical staff) do experience direct or secondary trauma, but even those who do not deploy (or deploy on operations with a low risk of trauma) experience work-related stress. Thus, when talking about primary prevention programs to reduce the risk of mental ill health in veterans, it is important to consider the experiences of the whole range of former military personnel.

PREVENTION RESEARCH IN FAMILIES

Unfortunately, there was no real indication in the scientific databases of any programs developed or utilized specifically among the families of veterans and first responders. The closest potential hit was a paper by Tam-Seto et al. (2016). They conducted an environmental scan of programs developed for military and veteran families where one of the parents was experiencing an operational stress injury. Their review identified 66 programs in Canada, Australia, the UK, and the United States. Approximately half of the programs were focused on providing families with support. The programs took either a peer support, individual support, or a support group approach. A smaller number of programs were focused on psychoeducation and were typically covered in a single information session. Tam-Seto et al. noted that there was not much evidence for the effectiveness or validity of these programs.

Other programs were identified in a more general internet search and will be discussed in Chapter 4. The downside of this is that there appears to be no independent evaluations of the validity of those programs.

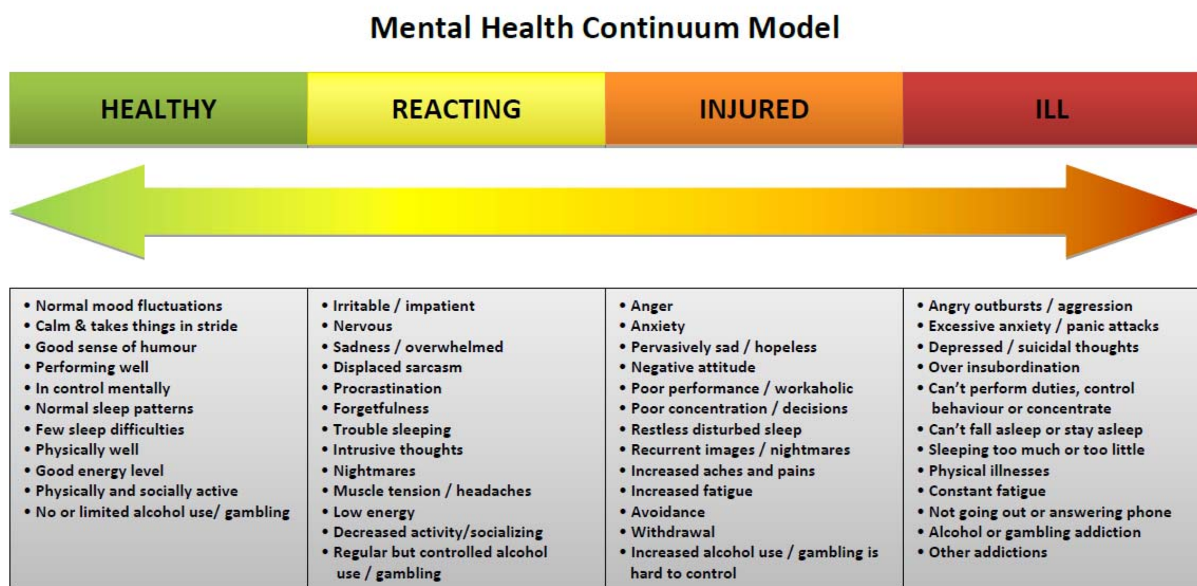
THE ROAD TO MENTAL READINESS PROGRAM

In 2009, the Canadian Armed Forces (CAF) developed the Road to Mental Readiness (R2MR) program[4]. It was originally designed as a mental health education training program to be given as a form of pre-deployment primary prevention. The hope was that the psychoeducational and skills-based components would serve to prevent mental ill health among CAF personnel during and after deployment. Over the years, multiple versions of the R2MR program have been developed. These versions were created to suit different needs, different branches of service, different ranks, etc.; some CAF versions of R2MR can be delivered in 45 minutes, others require a half day. Train-the-trainer programs will take longer.

As I mentioned earlier, R2MR training has two main elements: psychoeducation and stress-management skills. The psychoeducational elements are composed of background information on workplace stress and mental health, the stress response, the mental health continuum model, mental health stigma, and workplace resources to help those coping with excessive stress and mental ill health. The skills-based part of the training highlights four practices that have been shown to reduce stress in clinical settings: diaphragmatic breathing; SMART goal setting strategies; self-talk focusing on the ABCD model inherent in many cognitive behavior therapy programs; and visualization techniques. More information about the R2MR program can be found in Cohen et al. (2019).

One of the key innovations of the R2MR model is the psychoeducational piece focusing on the mental health continuum model. This model attempts to dispel the belief that mental ill health is either good or bad, diagnostic or in the clear. It notes that mental health symptoms run on a continuum and that people can move up and down that continuum; the important part is to be able to identify where you are on the continuum, know how to work yourself into a healthier place, and know when to seek help if you cannot get there. Figure 2.1 provides an example of the mental health continuum model. As can be seen, the model helps users identify some of the key aspects to look for at each main juncture of the model.

FIGURE 2.1: THE MENTAL HEALTH CONTINUUM MODEL FROM THE ROAD TO MENTAL READINESS TRAINING PROGRAM.



[4] The R2MR program was built by members of the Canadian Forces Health Services Group, with oversight from the Canadian Armed Forces Mental Health Education Advisory Committee. For the sake of transparency, I wish to note that I was a non-clinical member of the CAF Mental Health Education Advisory Committee.

The R2MR program has been very successful in its implementation and growth. It has been given to an unpublished number of CAF members since 2009. The Mental Health Commission of Canada was allowed to adapt it for use with first responders (originally known as the Road to Mental Readiness for First Responders, the Mental Health Commission of Canada has since renamed it The Working Mind for First Responders; information can be found at https://theworkingmind.ca/working-mind-first-responders). This is a 4- or 8-hour training program, with the 4-hour program being the basic training for workers and the 8-hour course being for organizational leaders. It is not known how broad the reach of the Road to Mental Readiness/Working Mind for First Responders program has been, though a recent study by Szeto et al. (2019) suggests at least 5,598 first responders have taken the program in Canada. News media also have reported that the Mental Health Commission of Canada is currently taking the Road to Mental Readiness/Working Mind for First Responders program to Australia, with training being implemented for the Australian Federal Police (e.g., The Canberra Times, February 25, 2019; The Australian, March 13, 2019). The SME interviews in Chapter 3 suggested that other Australian first responder organizations were already using either the whole program or elements of it.

So, with all this interest, what is the evidence supporting the R2MR program? Do we know that it does what it says it is supposed to do? Before getting into the evidence, it is important to note that the way the R2MR program has been described over the years has changed. It began conservatively in the CAF as a mental health education training program, but then evolved to be described as a mental health prevention and resilience program (Zamorski & Boulos, 2014). The current descriptions of R2MR on the CAF website no longer focus on mental health prevention or resilience training. Rather, it focuses on increasing awareness of mental health concerns in the workplace and reducing mental health stigma. The webpage for The Working Mind for First Responders does mention increases in short-term performance and longer-term mental health outcomes as program goals.

Given the past and current emphasis on prevention of mental ill health, as well as mental health stigma reduction, it makes sense for studies of the program's effectiveness to examine changes in mental health symptoms from before the program began until several months afterwards. For stigma, it would be important to examine changes in mental health stigma from baseline to after the course ended and beyond, in order to determine that any changes in mental health stigma stayed with the students. Moreover, for stigma outcomes, it is important to know that improved stigma has actually had a change in behavior. For the Road to Mental Readiness/Working Mind for First Responders program, that behavior change outcome is increased or improved treatment seeking for mental ill health.

Even though the R2MR program has been active in the CAF since 2009, it has only been recently that they have conducted an evaluation of its effectiveness. A group randomized control trial recently examined the effectiveness of the program among a sample 2831 CAF recruits (Fikretoglu et al., 2019). The study found no beneficial effects for psychological functioning or resilience at either of two time points post-training. There also was no effect on recruit training performance outcomes. While there were some small effects for stigma reduction, those effects disappeared a few weeks later. Moreover, fidelity of instruction (i.e., whether or not the instructor followed the manual for teaching the material) seemed to be an important factor, with classes not receiving a fidelity check doing worse on some outcomes compared to their control group. Thus, in this context, R2MR training did not appear to have the impact it was designed to have.

The only other test of the R2MR program on mental health outcomes was conducted by Carleton et al. (2018). They performed a pre-post evaluation of the effectiveness of the R2MR for First Responders program using a sample from the Regina police force. Carleton et al. examined changes in a wide range of mental health variables, as well as mental health stigma. They conducted tests with measures of these variables before the intervention began, immediately afterwards, and at three and 6 months post-intervention. For the

mental health variables, they saw no changes either immediately or later on. For their stigma measure, they found an initial improvement, but that disappeared afterwards.

A more recent study examined changes in stigma as a result of taking the R2MR for First Responders program (Szeto et al., 2019). The researchers reviewed data from almost 5600 participants across 16 training groups of public safety personnel (i.e., first responders, corrections, 9-1-1 operators/dispatchers). They noted a small improvement in workplace stigma attitudes as an immediate result of the training; those attitudes tended to still be healthier than baseline at a three month follow-up. There was also a small improvement in people's expectations that they would seek help if they experienced a mental health outcome, though that was based on expectations only (i.e., not actual behavior).

Overall, it is not surprising that the R2MR program has shown a poor ability to act as a primary prevention program for workplace mental ill health. As I highlighted in my review of general workplace mental ill health interventions, there are several factors in both program design and implementation that appear to be important to an intervention's success, and the R2MR program tends to incorporate almost all of the elements that have been linked to poor outcomes (or, in some instances, potentially exaggerated outcomes).

- It uses a classroom format, which Vanhove et al. (2015) showed produced smaller effects; moreover, train-the-trainer approaches also produced small effects.
- Two of the three studies used a weaker pre-post design, which both Vanhove et al. (2015) and Conley et al. (2015) showed produced significantly higher effect sizes than the more rigorous randomized control group approaches. In other words, the higher effect sizes (when they occur) tend to be an artefact of the evaluation method, not the program itself. But the corollary is that, when findings do not occur with a weaker evaluation method (such as with Carleton et al., 2018), they likely would not appear with a stronger method.
- There is no (or very little) supervised practice of the skills training (Conley et al., 2015). Moreover, because R2MR uses a single session learning format, there is no skill supervision over time. As Czabała et al.'s (2011) review paper showed, most programs run for several weeks, and this gives instructors time to supervise progress with skill development.
- There are no maintenance classes, especially for the skills element of R2MR. That is, Conley et al. (2015) noted that skills atrophy over time. As such, there needs to be additional, ongoing training. However, this is just the underlying assumption behind Conley et al.'s finding. There is currently no evidence that skills-based programs that use a maintenance approach are any more effective than those that do not.

To summarize, even though the R2MR and R2MR for First Responder programs appear to be popular, there is no strong evidence that they do what people think they do. Given this current lack of validity, more evidence (especially strong evidence) needs to be gathered. This may entail changing the program content and/or delivery format and re-evaluating the program. This would likely be an iterative process and will take time.

At this point, it is safe to say that the R2MR program has no evidence of effectiveness and should not be treated as a valid mental ill health prevention program.

WHAT ABOUT MINDFULNESS-BASED INTERVENTIONS?

Over the past two or three decades, there has been increasing interest in mindfulness-based interventions as a way of reducing and managing stress and its adverse outcomes. The current interest initially began with Kabat-Zinn's (1982) application of mindfulness-based stress reduction as a method of controlling chronic pain. Within this training context:

“MBSR is a group-based programme, typically involving 8–10 weekly meetings delivered by a trained mindfulness teacher, in which participants are offered mindfulness meditation teaching and an opportunity to practise a variety of mindfulness meditative techniques. This is often accompanied by group work and individual support (e.g., opportunities for participants to discuss their experiences with the programme facilitator, and ideally to receive appropriate guidance, encouragement, and emotional support). Importantly, participants are expected to practise mindfulness daily, and are moreover encouraged to continue this after the completion of the training.” (Lomas et al., 2017, p. 493)

Since then, the general concept of mindfulness meditation has taken hold. People are learning and engaging with a wide range of practices, from Kabat-Zinn’s mindfulness-based stress reduction program to following pre-recorded meditations on their phones.

The question for this scoping report is whether mindfulness-based interventions can be used as a way to prevent mental ill health in the workplace. Several studies have explored this question and there is, as yet, no conclusive evidence for its effectiveness. There are certainly review papers that describe the many reasons why mindfulness-based interventions should work as a workplace mental ill health intervention (e.g., Etough, 2015; Good et al., 2015; Sutcliffe et al., 2016), and several individual studies that suggest its promise (e.g., Aikens et al., 2014; Joyce et al., 2018).

However, systematic reviews and meta-analyses of studies that explored this issue have found mixed evidence that mindfulness-based interventions serve this purpose. For example, Lomas et al. (2017) conducted a systematic review of 153 papers that studied mindfulness’ effect across a wide range of outcomes. They found that, while many of the studies showed that meditation appeared to have an improvement on the mental health of participants, those effects were tempered with the fact that most of the studies in the review used poor quality research designs. Poor quality research tends to lead to inflated estimates of overall effect size.

A later, meta-analytic study (Lomas et al., 2019) examined the effects of only the randomized control trials and found a moderate effect for mindfulness. That is, the mindfulness intervention did improve mental health outcomes such as depression, anxiety, distress, and burnout. However, their meta-analysis identified significant methodological concerns with the studies included in the review. That is, even though they were RCTs, they still had flaws. Lomas et al. noted the importance of developing a more robust evidence base for mindfulness-based workplace mental health interventions.

Another recent systematic review and meta-analysis of RCTs did show that workplace mindfulness-based interventions reduced symptoms of depression and anxiety, and that the effects of the intervention could still be observed at least three months afterwards. However, the review was unable to make any claims about the intervention’s effects on burnout (Bartlett et al., 2019). Bartlett et al. also compared findings between mindfulness and other active interventions. They found mindfulness was better than yoga at reducing depression and stress, and it also led to more improvement than a leadership course. However, there was a substantial amount of heterogeneity in the data, suggesting the presence of important methodological factors that might inhibit or enhance the effects of these programs. In other words, more methodologically rigorous studies need to be conducted.

A review and meta-analysis by Burton et al. (2017) examined the effects of mindfulness-based interventions on stress in health care professionals and found moderate effects at stress reduction, but did not examine mental ill health outcomes. This is an important issue with many applications of mindfulness. That is, mindfulness was designed mainly to reduce stress so that the negative physical and psychological effects of stress could be ameliorated. However, not all studies want to examine whether the mindfulness-based

intervention reduces or prevents mental ill health (which is a more distal outcome). Rather, many studies just want to focus on the more proximal outcome the intervention was designed for – stress reduction.

Another potential limitation stemming from Burton et al. was that they noted the potential for a file drawer problem in their review (i.e., when non-significant findings are not made publically available as part of the scientific literature on a specific topic). If non-significant results are thrown out, then that has the potential to bias our interpretation of the available evidence. Thus, this is a potential risk when interpreting the findings they presented in their study.

Applications of mindfulness-based interventions to first responders and veterans have been limited. For example, Christopher et al. (2016) provided an 8-week training course with a small group of police officers. They used a weaker pre-post design and found that global ratings of mental health improved after training, while exhaustion and burnout, as well as perceptions of policing-specific stress, also decreased. While not an intervention, Chopko et al. (2013) found a modest correlation between self-reported mindfulness skills and symptoms of PTSD. With so few studies available, overall conclusions about mindfulness' effectiveness in first responders and veterans cannot be drawn, but it is most likely that the findings from other workplaces generalize to these contexts as well.

Mindfulness is a relatively new construct and researchers and practitioners are still learning how best to define, apply, and measure it. For any future applications of mindfulness-based mental ill health prevention programs in the workplace, it is important to learn from the previous iterations of the programs that did not work as intended. This is similar to the lessons learned from the previous meta-analyses of workplace mental ill health prevention programs (Bellón et al., 2019; Conley et al., 2015; Vanhove et al, 2015). There are a few critiques currently available, but the one written by Jamieson and Tuckey (2017) is perhaps the most thorough. Jamieson and Tuckey identified numerous potential hazards to the internal validity of workplace mindfulness-based interventions, including:

- Different definitions of mindfulness across interventions may not make them comparable.
- Adapting or changing the program to fit the needs of individual workplaces seems easy, but is a major threat to the program's internal validity. Changing the time involvement, the content, and even the delivery mechanism may result in an ineffective implementation. The same can be said for programs that use inexperienced trainers. All changes should be validated before or during implementation to make sure the program is a robust one.
- Some changes to mindfulness-based programs can actually be harmful to program participants.
- Using random allocation to intervention or control conditions is the key to program success. This approach can be problematic for some organizations, because they want a quick and easy implementation. However, this approach gives the strongest evidence that a program works, when it does. In other words, it can save organizations money in the longer term.
- Manipulation checks are important. Even though the program is designed to improve symptoms of mental ill health in the workplace, what is supposed to get workers there is improved mindfulness. Does the training actually improve mindfulness? This should be examined along with the primary outcomes.
- Attrition is important. That is, how many people started the program vs. the number of people who finished it (i.e., attrition)? If a lot of people dropped out, is the evaluation a fair one?
- Adherence is also important. Did the people who are in the program actually do the work they needed to do during the several weeks of the course? If some did but others didn't, that will likely impact the findings. More data = better interpretability.
- Don't forget the importance of program acceptability. Did the users like the program? This is not an indication of how effective it is, but it will help sell the program to others.

- Did users' skills and proficiency fade over time, or are maintenance sessions required? If so, how often and for how long do these sessions need to take place? In other words, don't assume that skills taught once will be maintained.

Mindfulness-based interventions may be helpful as a way of preventing mental ill health in first responders and veterans. However, based on the current research on program implementation, there is a lot of work to do for both the program implementation teams and the organizations who would like it implemented.

PAST RESEARCH – MENTAL HEALTH EARLY INTERVENTION IN THE WORKPLACE

Early intervention programs appear to be common across first responder communities, as well as among those occupations for which there may be inherent psychological risks. While these types of programs may have emerged gradually over time, their continued presence appears to reflect the fact that they have been codified into many national standards or guidelines for psychological health and safety in the workplace. As I noted earlier, the Canadian, Australian, and EU guidelines all call for some form of early intervention in the face of workplace trauma or crisis.

Sometimes also called crisis management programs, early intervention programs are typically designed to minimize the experience of mental ill health following exposure to a traumatic or potentially traumatic event. These types of programs can take either a primary, secondary, or tertiary health prevention focus. Those taking a primary health prevention focus will attempt to reduce the likelihood of symptom development starting as soon after the event as possible, before any symptoms emerge. Programs taking a secondary health intervention approach might use monitoring of traumatic exposures and symptom experiences to help identify the effects of trauma exposure, who might be most at risk, and when an intervention is needed. Those taking a tertiary approach aim to help people get into treatment earlier. These types of programs are recommended in several of the workplace guidelines or standards.

It should be noted, however, that exposure to a traumatic event does not always lead to psychological ill health. Bonanno (2004) provided an interesting way of thinking about this. Consider a scenario in which 100 people experienced the same traumatic event (e.g., a natural disaster like Hurricane Katrina; combat, war, devastation). According to what we know about the association between trauma exposure and mental ill health, approximately 40 people will experience no acute stress response, whereas approximately 60 people will experience varying degrees of an acute stress response (e.g., disorientation, restriction of attention, depression, anxiety, anger, despair, over-activity, withdrawal, numbing, detachment, de-realization, depersonalization or dissociative amnesia). Of those 60 people who experience an acute stress response, the symptoms will recede over about 4 months in about 92% of the cases (55 people). For the remaining 5 people, the symptoms will actually increase: things like hyper-vigilance, emotional numbing, re-experiencing the event, avoiding things that can cause you to remember the event[5]. This may become PTSD, depression, or another form of anxiety. There may also be anger management problems, substance abuse problems, violent acts, or suicide.

While this way of thinking about the association between trauma exposure and psychological health is very helpful in letting people know about their overall risks of developing a mental health disorder, the example is focused on a single trauma exposure. As the evidence suggests, first responders and military veterans with combat experience can have multiple exposures to traumatic events. Additionally, there appears to be a dose-response relationship between trauma exposure and PTSD symptom severity (Carleton et al., 2019;

[5] These numbers may vary, with some traumatic events having a higher conditional risk of developing a mental health concern (Kessler et al., 2017).

Jakob et al., 2017). A recent large scale study of traumatic exposure and mental ill health among Canadian public safety personnel used advanced statistical modeling to suggest that, if organizations were to remove all exposure to work-related traumatic events, they could reduce the number of positive screens for PTSD by 68%, depression by 57%, generalized anxiety disorder by 51%, and panic disorder by 80% (Carleton et al., 2019).

Given the frequency of exposure, combined with the potential mental health risks of those exposures, early intervention programs may be especially important for first responder groups. Military veterans may factor into this as well, given that some veterans may transition from the military into a job as a first responder. Finding information on the percentages of first responders who are also veterans has been difficult. Data from the United States (Shafer, Sutter, & Gibbons, 2015) showed that 10% of EMTs, 19% of firefighters, and 26% of police once served in the US military. These numbers were significantly higher than the percentage of the population overall who has ever served (7%). The SMEs interviewed for Chapter 3, however, suggested that these numbers are much smaller in other countries. Thus, in some situations, former military service should be considered when addressing issues such as lifetime exposure to traumatic or potentially traumatic events, especially if the veteran served in an occupation that had greater exposure to combat to its effects.

The majority of early intervention programs take one of three forms: peer support programs, critical incident stress management/debriefing by trained peers; and a clinical intervention. Of these, peer support and the host of critical incident stress management/debriefing programs are the most popular. A recent review by Beshai and Carleton (2016) provides some definitive information on the current status of these programs, including evidence for their validity. This information will be provided below. Afterwards, three potentially interesting programs will be briefly discussed. Programs for veterans and families will not be discussed in this section as none could be identified in the scientific databases.

CANADIAN INSTITUTE FOR PUBLIC SAFETY, RESEARCH, & TREATMENT 2016 REVIEW PAPER

Beshai & Carleton (2016) conducted an international scoping review to identify the available peer support and other early/crisis-focused intervention programs, and then examined the evidence for the effectiveness of those programs. They reviewed the scientific findings in general, but then focused on the evidence that the programs work within three first responder occupations: police; firefighters; and EMS/paramedic personnel. Beshai & Carleton also conducted a survey of leading Canadian police, fire, and EMS/paramedic organizations to determine which programs, if any, those organizations use for early/crisis-focused intervention.

Beshai & Carleton's (2016) literature review identified 14 programs with the potential to be used as a form of post-crisis or mental health early intervention, including peer support. These programs are highlighted in Table 2.3. In general, their review showed that, when these types of programs are implemented, there is typically no formal evaluation of their efficacy or effectiveness. Descriptive statistics about program enrolment and satisfaction with the training are the usual measures reported. However, these are not measures of whether a program does what it is supposed to be doing (i.e., program effectiveness or validity). When mental health outcomes are included, they tend to be focused on PTSD, depression, and anxiety. Overall, their review revealed mostly no beneficial mental health effects for these types of early intervention programs. When there were statistically significant effects, they tended to be small in their overall effect size and potentially limited due to poor study design. In general, the results were disappointing, suggesting that first responder communities implementing these programs might not be getting the results that they hoped for, and that were advertised.

TABLE 2.3: AN OVERVIEW OF POST-CRISIS, EARLY INTERVENTION PROGRAMS USED BY FIRST RESPONDERS AND IDENTIFIED BY BESHAI & CARLETON'S (2016) REVIEW.

Program Name	General Description of the Programs*
Peer Support	People with shared histories in the same organization provide structured assistance to their peers after experiencing a critical incident. They are typically trained to provide support (e.g., Psychological First Aid or Mental Health First Aid) but do not provide mental health treatment.
Critical Incident Stress Management (a.k.a., the Mitchell Model)	This is a system of eight prevention and intervention activities designed to work together and be given by mental health professionals (though not always). Because of the overall focus on management, these can be delivered before, during, and after a critical incident.
Critical Incident Stress Debriefing (only one aspect of the Mitchell Model)	This is just one of the intervention elements of the Critical Incident Stress Management model above, and is also often referred to as group psychological debriefing. It was designed to be part of the Critical Incident Stress Management model, not a stand-alone intervention.
Demobilization	This is an intervention approach designed to give exposed individuals psychoeducation around issues such as what stress is and is not, how to rest and refuel. The overall goal is to facilitate return to work.
Debriefing, Raphael Model	This stand-alone intervention is derived from Critical Incident Stress Debriefing. It encourages people exposed to a critical incident to discuss both positive and negative feelings with the mental health professional delivering the intervention. The Raphael Model and the Dyregrov Model are almost identical, with the Raphael Model being used mostly in North America and the Dyregrov Model being used mostly in Europe.
Debriefing, Dyregrov Model	This stand-alone intervention is derived from Critical Incident Stress Debriefing. It encourages people exposed to a critical incident to discuss both positive and negative feelings with the mental health professional delivering the intervention. The Dyregrov Model and the Raphael Model are almost identical, with the Dyregrov Model being used mostly in Europe and the Raphael Model being used mostly in North America.
Emotional Decompression	This is a hybrid debriefing program. It contains elements of other programs, but mostly focuses on psychoeducation and normalizing the trauma reactions.
Group Stress Debriefing	This intervention program was designed specifically for first responders and other public safety personnel who are repeatedly exposed to potentially traumatic events as part of their jobs. It is not meant to be a stand-alone program, but rather part of a peer-support program.

Multiple Stressor Debriefing	This is a modification of Critical Incident Stress Debriefing used in the aftermath of long-term disaster relief (e.g., natural disaster; military conflict), when there have been a series of stressful and potentially traumatic exposures. It is used mostly by Non-Governmental Organizations (NGOs). It is not clear if this is a stand-alone program or should be used as part of a larger initiative.
The National Organization for Victim Assistance (NOVA)	This program provides education and crisis intervention to primary victims (i.e., people in communities directly affected by a critical incident). First responders, public safety personnel, military, and NGOs are considered secondary victims, so this program did not apply to them originally. However, a case has been made that it is an applicable early intervention approach for these latter groups.
Defusing	This is a specific strategy that is used either as the crisis is ongoing or immediately afterwards. The focus is on allowing the person to talk about their experiences, and to vent their emotions, in an informal setting. This is a core component of Critical Incident Stress Management, but is used as a stand-alone program in some instances.
Psychological First Aid	This can be a prevention or early intervention program that can help minimize the negative effects of stress or potential trauma. It focuses on providing basic needs, psychoeducation, access to treatment, and overall emotional support.
Psychoeducation	This is a general psychological approach that helps teach people about basic psychological processes (e.g., stress reactions) and normalize their experiences. It can be offered as a stand-alone program or as part of a larger program.
On-Scene Support	This approach generally refers to the monitoring of colleagues for signs of distress while they are performing their regular duties (e.g., responding to a call that may potentially lead to trauma exposure).

* Note: The main elements of these programs are described in more detail by Beshai & Carleton (2016).

However, more troubling issues emerged from Beshai and Carleton's (2016) survey with Canadian first responder organizations. When they asked their survey respondents about the perceived strengths and weaknesses of the early intervention programs their organizations had implemented, most stated that they believed the main strength of the programs was that they worked – that they improved the mental health and well-being of the members who had been exposed to the programs. That is, they believed the programs worked without having seen any evaluative evidence of their effectiveness. This is at odds with the findings showing minimal effects, if any.

The survey respondents also indicated that the programs used in their organizations were rarely implemented in the ways they were supposed to have been (e.g., only bits and pieces of larger programs were used, even though those larger programs were meant to be implemented as a whole), that there was a lack of consistency in how the programs were actually implemented and delivered across sites (i.e., poor fidelity), that there was often a lack of training for those delivering the main program elements (e.g., peer supporters), there was often a shortage of people delivering the program, and there was very little involvement from mental health professionals in the programs (e.g., training people to deliver the programs, monitoring for adverse effects).

The main take away from Beshai & Carleton's (2016) review is that there is little scientific evidence that early intervention programs work within the first responder communities. Organizations may be further limiting any potential effects by not implementing programs as they were intended, not requiring fidelity in the way they are taught or administered, and not providing sufficient oversight or involvement in the program by a mental health professional. Organizations appear to be relying on employee satisfaction and perceptions that the programs are effective rather than on any form of robust evidence that they are doing the job they were intended to do (i.e., reduce the likelihood of future mental health symptoms).

It should be noted that these findings are supported by two reviews of PTSD treatment and prevention programs conducted by the UK's National Institute for Clinical Excellence (NICE). In their 2005 review, NICE noted that research conducted on early intervention programs tended not to show evidence of effectiveness at reducing future PTSD symptomatology. Moreover, the NICE guidelines highlighted the poor quality of the research evidence in the field. An updated clinical guidance document released by NICE in 2018 showed no real improvement in the research evidence base. Because of this, the authors of that report recommended that early intervention programs not be used for the expressed purpose of reducing future PTSD symptoms.

A recent qualitative review by Richins et al. (2019) both supports the NICE findings and challenges them. In support of the NICE findings, Richins et al. highlight the poor quality of much of the early intervention research. Similar to the point raised by Beshai and Carleton (2019), Richin et al. found that 73% of the evaluations they reviewed did not implement the program as it was designed and validated by the program developers. Thus, the poor degree of fidelity in program implementation appears to extend well beyond Canada.

In their challenge to the 2018 NICE guidelines and recommendations, Richin et al. (2019) emphasized the importance of social support that post-incident early interventions can give, especially in group contexts. In addition, they stressed the continued finding that perceived effectiveness (vs. measured effectiveness) is often high among those who undergo post-incident early interventions. Whether or not perceptions of effects can have a positive impact on factors other than future mental health is not well understood. However, given the poor quality of the research base in this area, adding this element to the laundry list of research questions seems fair.

MENTAL HEALTH FIRST AID, TRAUMA RISK MANAGEMENT, AND RESPECT: THREE PROGRAMS TO CONSIDER?

There are three specific programs I feel need a little extra attention, either because of their higher profile or their future potential. Mental Health First Aid (MHFA) and Trauma Risk Management (TriM) can be considered adjunct training to peer-support programs and have found significant (MHFA) or growing (TRiM) support in that context. The third program, RESPECT, is new and interesting, but its applicability in first responder organizations may be limited by issues of organizational trust.

Mental Health First Aid

Mental Health First Aid is a conceptual offshoot of Psychological First Aid (PFA), and I will be treating them as similar concepts here. MHFA has a more general focus, whereas PFA was developed as a support for those who have experienced a catastrophic event (e.g., Vernberg et al., 2008). MHFA is an 8-hour training program focused on giving trainees a broad range of information on mental health. Similar to the physical first aid training model, the overall goals are to give individuals the skills to help themselves and others if they perceive they are experiencing poor mental health. The creators suggest that the program can be given to people who are experiencing poor mental health or those not yet experiencing poor mental health. MHFA uses the ALGEE acronym to describe its approach to helping others: (1) Approach the person, assess the situation, and assist with any crisis; (2) Listen and communicate nonjudgmentally; (3) Give support and information, but do not try to solve their problems for them; (4) Encourage the person to get appropriate professional help (e.g., see their GP for a referral to a mental health specialist; emergency room visit if necessary); and (5) Encourage other supports (e.g., family, friends, community). As Morgan et al. (2018) note, "[a]ll course content is as evidence-based as possible and undergoes regular revision to incorporate new knowledge. Course materials draw on expert consensus studies that systematically combine the views of consumers, carers and professionals on how to provide MHFA … This commitment to research evidence is also reflected in the continued focus on course evaluation." (p. 2)

Whereas evidence supporting the validity of PFA is limited and controlled studies are lacking (Fox et al., 2012), there is fairly substantial evidence supporting the effectiveness of MHFA is some, but not all, of its goals. An initial meta-analysis of 15 studies showed that MHFA improved mental health knowledge, attitudes and behaviors (Hadlaczky et al., 2014). However, there were some limitations with that study. First, even though the studies reviewed varied in terms of study design (pre-post vs. control group trials), the duration from training end, and the number of post-tests, these factors were not assessed. So, based on this analysis, we don't know whether the effects were inflated in weaker pre-post designs compared to control group designs. We also don't know whether the gains reported are lost over time, and refresher courses are needed, in the same way that refresher courses are needed in traditional medical/physical first aid (e.g., de Ruijter et al., 2014).

A second meta-analysis of MHFA was conducted by Morgan et al. (2018). For their review, they included only studies that used high quality control group designs. They identified 18 trials (with 5936 participants) and found that the effects tended to differ depending on the training outcome they studied. For the increased mental health knowledge component, there were moderate to large increases compared to baseline scores and, while those improvements declined somewhat in the six months post training, participants retained a fair amount of the new knowledge. The effects of training on stigmatizing attitudes were not large, suggesting that MHFA is not good at reducing mental health stigma. MHFA's effect on improving people's confidence in helping someone with a mental health problem was significant, with a moderate effect size. However, those gains were mostly lost within six months. While MHFA did not change the likelihood a person would help someone with a mental health concern, it did improve the quality of the help they gave (moderate to large effect sizes). Finally, MHFA does not have an impact of improving the mental health of those trained in it. Thus, it is not a treatment option, solely an assistive aid when helping others.

Does MHFA work as a workplace mental health early intervention program? A review by Bell et al. (2018) suggests that, while MHFA in the workplace still confers additional knowledge on those taking it, it has not been adapted effectively to the workplace context. As a result, there is no evidence to support the notion that MHFA can be considered part of a larger organizational improvement program in managing workplace mental health conditions.

Trauma Risk Management

Trauma Risk Management (TRiM) is a peer-delivered intervention designed initially for the UK Royal Marines (Greenberg et al., 2010; Whybrow et al., 2015). It is a 3-5 day training program that teaches selected individuals about trauma psychology and the basics of psychological risk assessment. Trained individuals can meet with affected people either once or on an ongoing basis, usually after exposure to potentially traumatizing events, to advise them on whether mental health treatment is needed and what next steps would be best. TRiM-trained personnel can also advise leaders on the best practices for managing mental health in the workplace. A narrative review of studies utilizing the TRiM procedure revealed a mix of findings. Some evidence suggests that those exposed to TRiM have lower levels of stigma around mental health treatment-seeking, while other studies suggest those with TRiM exposure feel they have more social mental health support options than those without TRiM experience. TRiM has been used often in UK police, as well as in some UK ambulance services. An advanced press release from a study of almost 17000 UK police officers noted that TRiM was a common early intervention strategy (see https://www.cam.ac.uk/sites/www.cam.ac.uk/files/inner-images/thejobthelife_findings.pdf; retrieved 7 July, 2019). The outcomes of two published studies (e.g., Hunt et al., 2013; Watson & Andrews, 2018) suggest there may be promise for TRiM within first responder communities, but that more research is definitely needed (see also Richin et al., 2019).

RESPECT

RESPECT is a new program developed by the Black Dog Institute at the University of New South Wales. The focus is on training managers to have difficult conversations with employees around mental ill health, and to give them the skills and confidence to do so. The program is built around the acronym for RESPECT: (1) Regular contact is essential; (2) Earlier is better; (3) Supportive and empathetic communication is important; (4) Practical help is needed from a manager, not psychotherapy; (5) Encourage help-seeking; (6) Consider return to work options; and (7) Tell them the door is always open and arrange the next contact. The program teaches mental health knowledge and communication skills. It is delivered in a single, 4-hour, face-to-face program with small, interactive groups.

Milligan-Saville et al. (2017) conducted a cluster-randomized control trial (i.e., a strong research method) to test the program's effectiveness with a group of 128 duty commanders from Fire and Rescue New South Wales. They noted a large reduction in work-related leave among the employees working under those who were randomly assigned to receive the RESPECT training, but an actual increase in work-related leave among the employees working under those who were randomly assigned not to receive the training. There is no indication that people exposed to managers with this training reduced their symptoms of poor mental health afterwards.

It is not yet known which factors might enhance or inhibit the program's utility. For example, will this type of program be effective in organizations where there is a lack of trust in managers? Distrust in managers may hamper their ability to have open and honest discussions with employees, even if the managers are genuine in their desire to help. At least one of the SMEs I interviewed in Chapter 3 indicated that this would be a barrier to program effectiveness in the organizations they have experience with. Much work still needs to be done in this area.

Still, this approach shows promise as a way of effectively managing workplace-related stress. It is supported, in part, by a recent meta-analysis showing that these types of manager-focused training programs appear to improve managers' mental health stigma, knowledge, and behaviors that help support staff with mental ill health; however, it is important to note that these types of programs do not actually reduce the frequency of mental ill health among their staff (Gayed et al., 2018). Moreover, a recent study by Shann et al. (2019)

focused on the importance of differentiating between affective, cognitive, and behavioral elements of social stigma, as well as adapting program implementation to suit the management culture. Her study noted that reducing certain types of stigma (e.g., affective and behavioral) in managers may be more effective than trying to reduce other types of stigma (e.g., cognitive).

PAST RESEARCH – SUICIDE PREVENTION IN THE WORKPLACE

The increased risk for suicide among veterans and, especially, first responders appears to be growing (e.g., Stanley et al., 2016; Stanley et al., 2017; Vigil et al., 2019). However, veterans and first responders are not the only at-risk occupational groups. Thus, this section is divided into two, with the first part exploring suicide prevention programs in out-of-scope occupations (relative to the goals of this scoping review) and the second part exploring in-scope occupations.

Before providing this review, it is important to discuss the differences between some of the metrics of success these programs use. If the overall goal of a suicide prevention program is to reduce suicide rates in the workplace, then the organization doing the program implementation and evaluation should know the historic rates of suicide within the targeted group (or groups), as well as the national or provincial/state/regional suicide rates. Comparisons with the historic suicide rates will tell the evaluators if there was a statistically significant reduction in suicide rates in a given period after program implementation. A more accurate indication of program success is whether the group that received the program had a significantly different rate of increase or (hopefully) decrease in suicide rates compared to the population rates. However, rates of suicide will vary within populations (both the general and target populations) from year to year, so a program's success or failure cannot be determined after a single year. Often multiple years of data are needed to identify program effects (i.e., trends of increased or decreased suicide rates) from random variation.

Other programs are designed to decrease suicide ideation and attempts, as well as completed suicides. For those programs, reductions in ideation and frequency of attempts can be indicators of program success. However, there is only a small correlation between suicide ideation and attempts, and only a small percentage of those who have attempted suicide once will eventually die by suicide. For example, using data from a large scale Australian national survey, Pirkis et al. (2000) showed that only 12% of those with suicide ideation went on to attempt suicide. A review by Klonsky et al. (2016) underscores the complexity in the relationship between these variables and the fact that it is very difficult to predict who will move beyond suicide ideation to suicide attempt to completed suicide. The point here is that suicide prevention programs that are evaluated in terms of reduction in suicide ideation and attempts may or may not have an impact on completed suicide (mostly for statistical reasons). And, if there is an impact, the effect size for that impact may not be as large as for programs designed to reduce completed suicides. Thus, if the goal is the reduction in completed suicides, I recommend building the program to accomplish that goal and evaluating it in terms of reduction in completed suicides compared to a national average.

Do suicide prevention programs work in the general population? A recent meta-analysis suggests that they can be effective (Hofstra et al., 2019). In their review of 15 community and hospital-based suicide prevention programs, Hofstra et al. noted that the pooled effect size was moderate to large on their average ability to reduce the number of completed suicides and was moderate for the reduction of suicide attempts. However, the authors noted that many of the studies had several aspects of bias built into them, reducing their overall confidence in the effect sizes.

But not all meta-analyses of suicide prevention programs show similarly positive effects. A paper by Milner et al. (2016) reviewed studies of the effectiveness of suicide prevention programs delivered by general

practitioners. They found no consistent evidence that these types of programs are effective. Study design appeared to be a big factor in whether or not an evaluation found significant effects for the intervention. Moreover, and along the lines of the Hofstra et al. (2019) review, there was significant bias inherent in the studies included in Milner et al.'s review. More research using stronger, more effective research methods is needed, but program developers appear to be moving in the right direction.

However, given that the most common approaches to suicide prevention fall under the gatekeeper model (i.e., teaching people to identify those at-risk of suicide attempts and referring those people to seek treatment), Isaac et al. (2009) noted the following:

"Research into the effectiveness of gatekeeper training programs is limited by numerous factors. First, the suicide base rate is low, which makes it difficult to use reductions in the suicide rate (the ultimate goal) to demonstrate effectiveness of a particular program. The percentage of the general population that would need to be trained to effect a significant change on the suicide rate is unknown. Second, in most studies, gatekeeper training exists within broader programs to prevent suicide. Thus the effect on suicidal ideation, suicide attempts, and death by suicide of a gatekeeper training program alone is not clear. Third, use of a control group is extremely difficult in this type of research. These limitations will need to be addressed when undertaking further research." (p. 265)

GENERAL WORKPLACE SUICIDE PREVENTION PROGRAMS

As Milner et al. (2015) have noted, the majority of people who suicide are employed full-time when they die, making the workplace an ideal location for suicide prevention programs. Moreover, several non-first responder occupations have greater levels of suicide risk than others. A systematic review and meta-analysis by Milner et al. (2013) noted the following:

"At greatest risk were labourers, cleaners and elementary occupations (ISCO major category 9), followed by machine operators and ship's deck crew (ISCO major group 8) … Significantly elevated risk was also apparent in farmers and agricultural workers (ISCO major group 6), service workers … (ISCO major group 5) and people in skilled trades (builders and electricians) (ISCO major group 7) compared with working-age populations. The lowest rates were seen in managers (ISCO major group 1) and clerical workers (ISCO major group 4). Results of this meta-analysis also indicated significant differences by skill level, with the lowest and the second lowest skilled professions being at particularly elevated risk." (pp. 412-413)

Why is there such variability in suicide risk across these occupations? Are there inherent aspects of jobs that put some people at greater risk than others? This is an important question to address if employers wish to develop effective workplace suicide prevention programs. A systematic review and meta-analysis conducted by Milner et al. (2017) examined the associations between several psychosocial aspects of the workplace and increased odds of suicidality. Poor support from colleagues or supervisors, as well as having low levels job control, were significantly associated with increased risk of both suicide attempts and completed suicides. This was the case for both men and women. However, for men only, higher levels of job demands were associated with greater odds of completed suicide. Given the importance that each of these factors are afforded in the various standards and guidance documents promoting psychological health and safety in the workplace, it would appear that failure to address these workplace factors not only causes poor psychological health but is also associated with an increased risk of suicide.

With this in mind, do workplace suicide prevention programs address these issues? Two recent reviews of the content in these types of programs suggest that the answer is maybe. Takada and Shima (2010) identified four key aspects of workplace suicide prevention programs that had been published in the scientific literature. These four areas were:

- Education and training for individual employees: The main focus of this aspect of suicide prevention training was on mental health education.
- Developing a support network: The focus on this element was to build a support network among staff, so that people felt they had someone they could talk with if/when they needed to.
- Cooperation between internal and external sources: The main focus here was to tie the prevention program to external health professionals so that people felt they had health professional outside the organization to go to when needed.
- Education and training for managers and occupational health staff: The focus here seems to be on mental health education for these two groups.

Milner et al. (2015) identified similar themes in the 13 suicide prevention programs they reviewed. However, they also noted that some at-risk organizations had designed and implemented prevention programs specifically for those working in their fields (e.g., farming, construction, community services, public sector), so the content might have been adapted slightly.

Thus, even though there have been specific, work-related risk-factors identified, suicide prevention programs mostly seem to focus on reacting to people displaying signs of suicidality, as opposed to being proactive and addressing workplace factors known to cause poor mental health and which are correlated with an increased risk of suicide attempts and completion. Developing a social support network, which was identified by both review papers, appears to address a preventative element.

With all that said, it is important to note that most workplace suicide prevention programs are not evaluated for effectiveness (Milner et al., 2015; Milner & LaMontagne, 2018a; Milner & LaMontagne, 2018b). Thus there are no systematic reviews and meta-analyses to rely on here. This is problematic because single studies tell users very little about the extent to which a program can effectively be translated from one workplace to another? It also tells users little about the magnitude of the findings and what elements of the program may be most important. As Milner and LaMontagne (2018b) noted:

"It is also significant that there is close to a complete lack of systematic research on workplace suicide prevention activities. This point not only refers to the limited number of evaluated studies in the area (as seen in our review, only a handful of interventions had published evidence of effectiveness) but also to the fact that workplace suicide prevention efforts should (if appropriate) be aligned with current "best practice" in workplace mental health more generally … Each of these guidelines advocates preventive (e.g., improvement of working conditions) as well as reactive (e.g., addressing mental health problems as they arise the workplace context) measures." (p. 69)

Still, there are some workplace suicide prevention programs that have been evaluated and the effects suggest that they can be effective (e.g., Mishra & Martin, 2012). These were recently summarized by Milner and LaMontagne (2018a, 2018b), who also noted that the Australian Mates in Construction program has demonstrated strong potential, though would benefit from a stronger research method in its evaluation (see Martin et al., 2016, for a 5-year review of the Mates in Construction program).

SUICIDE PREVENTION PROGRAMS IN VETERANS AND FIRST RESPONDER ORGANIZATIONS

In the same way that there are very few available evaluations of suicide prevention programs in the general workforce, there are also very few available evaluations among first responder and veteran populations. The available evidence was summarized recently by Witt et al. (2017). They identified 13 studies in military (9 studies) and public safety populations (police = 2 studies; firefighters = 1 study). However, only six studies allowed for a quantitative assessment of their effectiveness at reducing suicide rates in their at-risk

populations. Of those six studies, only two of the three military programs and both of the police programs were shown to have a significant impact on suicide reduction. The study with firefighters showed no significant effect.

When the interventions were shown to be effective, they tended to halve the suicide rates over a period of years after the intervention was first implemented (e.g., Mishara & Martin, 2012).

Suicide prevention programs for veterans also were rare and, when they were reviewed, showed a mixture of findings (e.g., Bagley et al. 2010). Thus, there is no consistent evidence for the effectiveness of program in this population either.

KNOWLEDGE GAPS

My review of the academic and grey scientific literatures examining the validity of the available mental ill health prevention and early intervention programs, as well as the suicide prevention programs, used in veteran and first responder groups in the five target countries (Canada, Australia, New Zealand, Ireland, and the UK) has revealed several gaps in our available knowledge base. The same can be said for programs aimed at families of veterans and first responders. In this section, I will highlight what I feel are the most important gaps to address. I should note that there is no real order to the way these gaps are presented. In other words, the position of one gap in relation to another is not a sign that one is more or less important than the other.

GAP 1: A LACK OF HIGH QUALITY PREVALENCE DATA

One of the key gaps in the existing literature is that we do not know the extent of the mental health burden being experienced by veterans, first responders, and their families. It is especially important to be able to compare the rates of mental ill health for these groups to the general population's rates so that organizational leaders, researchers, policy developers, program designers, all the allied health professionals, etc., have a better understanding of the unique risks being faced by each of the three target groups. Moreover, these data should include a wide variety of mental health indices, as well as occupational and psychosocial risk variables that are in line with the current standards documents and the current state of the scientific literature.

These data have only recently begun to be captured in some larger surveys. Canada and Australia have started to collect larger datasets from first responders, but we still know little about the relative risk of veterans in each of the five countries and first responders in New Zealand, Ireland, and the UK. Still, even the recent, larger scale Canadian and Australian studies are not perfect. Both relied on convenience samples, making proper generalizations to population-based statistics difficult. The best case solution would be to have the national body charged in each country with collecting health-related information to do the data collection using an appropriate sampling strategy and with the same measurement approach that they use when they conduct similar assessments of the general population. In this way, best practices can be guaranteed for data collection methods, survey design and measurement, and data analyses. In addition, accurate comparisons can be made to the general population. This approach was used by the Canadian Armed Forces when they contracted Statistics Canada in 2002 and 2013 to conduct assessments of mental ill health within the CAF (Rusu et al., 2016).

Moreover, it would be helpful if all countries had similar strategies for developing and implementing these data collection initiatives. That is, it would be ideal if they could use similar strategies for participant recruitment, similar measures, and similar analyses. This would allow for a greater ability to assess veteran and first responder mental health burden not only as a function of each country's general population, but also across each country.

The downside is that this approach is expensive. There may be ways of reducing costs, such as not doing separate mental health surveys specifically targeted at first responders, veterans, and their families, but rather integrating this goal within a regular, population-based study performed by government agencies. Special codes could be implemented to identify targeted groups and oversampling could be done within specific at-risk occupations to ensure large enough sample sizes for proper generalizability and comparisons. This is just one potential approach. But given the increased awareness of first responder and veteran mental health, it is important to have the best possible data to support decision making. To have that data, researchers and policy makers need to get away from relying on convenience samples.

One approach that I do not recommend for determining the prevalence of poor mental health in the workforce is relying on EAP or sick leave data. Even if the reasons for EAP access or sick leave are coded effectively (e.g., depression, anxiety, substance abuse, PTSD), it still does not address the fact that many people with mental ill health do not seek help. This is especially the case for men (Seidler et al., 2016), making it a particularly important issue within male-dominated workplaces[6]. Workplaces using these approaches will likely underestimate the actual rates of mental ill health within their workforce. EAP or sick leave data may be useful, however, when combined with mental health prevalence data to assess the effectiveness of mental ill health prevention or early intervention programs. Reductions in EAP use or sick leave time, when compared to the historic trends and trends from other organizations, may be an important secondary indication of program effectiveness, along with the assessment of actual mental ill health prevalence rates. But they are not indicators of prevalence.

GAP 2: AN OVERLY RESTRICTIVE FOCUS ON POTENTIALLY TRAUMATIC EVENTS IN VETERAN AND FIRST RESPONDER RESEARCH

Most mental ill health prevention programs are developed with a focus on teaching first responders, veterans, or other at-risk employees to cope more effectively with the stress resulting from exposure to work-related traumatic or potentially traumatic events. However, this approach minimizes the known causal effects of several non-traumatic workplace stressors on the mental health of workers. Therefore, a broader discussion is needed about the non-traumatic types of workplace stressors that cause poor mental health, especially among first responders.

By this, I mean that first responder organizations need to look beyond traumatic or potentially traumatic events as the sole reason for poor mental health in their operational staff. They need to look at non-traumatic operational and organizational stressors, in the way Phoenix Australia (2018) did in their review of workplace mental health in the Australian Federal Police and the way the Canadian Institute of Public Safety Research and Treatment did in their survey of Canadian public safety personnel (e.g., McCreary, Cramm et al., 2018; McCreary, Groll et al., 2018; Taillieu et al., 2018). But first responder organizations also need to understand the ways in which the workplace stressors outlined in the various workplace standards and guidance documents also cause poor mental health (e.g., excessive job demands, lack of personal control in one's job, inadequate support from colleagues and managers, poor relationships [including harassment], role conflict or lack of clarity, poor change management, third party violence) in their occupational settings. Without this balance of focus between traumatic and non-traumatic workplace stressors, first responder organizations are not doing their due diligence in identifying and potentially mitigating the effects of all known causes of workplace stress and poor mental health. Additionally, if there is only a focus on the

[6] This also speaks to the importance of making sure that all high quality prevalence data can be disaggregated by respondent sex/gender.

importance of mental ill health stemming from traumatic events, there is the potential for stigma to develop around mental ill health issues that arise from non-traumatic workplace stressors.

GAP 3: AN OVERLY RESTRICTIVE FOCUS ON PTSD IN VETERAN AND FIRST RESPONDER RESEARCH

Most of the discussion on the mental health burden of veterans and first responders focuses on their risk for PTSD. And, yes, research supports the fact that, on average, these groups have higher levels of PTSD than the general population. However, when researchers broaden out their focus beyond PTSD to other mental health concerns (e.g., depression, generalized anxiety, other anxiety disorders, substance abuse, anger management), they find these two groups to be at a greater risk for many of them. With this in mind, first responder and veteran organizations, and the leaders, researchers, policy makers, and other health professionals studying these problems, need to expand their focus and bring these other aspects of mental ill health into the discussion.

Without this more balanced approach, there is a risk that those experiencing poor work-related mental health that is not PTSD might be stigmatized or denied appropriate compensation. For example, in jurisdictions where there is a workplace injury compensation process, workers may be treated differently if they have a diagnosis of PTSD vs. depression. This is the case, for example, in Canada, where provinces have legislation in place that means that, if a first responder claims a workplace mental health injury, they may be eligible for compensation if they can prove the injury resulted from a workplace incident. In some provinces, there is presumptive legislation, meaning that if a worker from a designated occupation comes forward with a diagnosis of PTSD, they are fast-tracked through the system without having to offer significant amounts of proof that their injury was caused in the workplace – it is assumed that PTSD is a health risk for those in that job. However, in those same provinces, if workers are trying to bring forward a compensation claim and have another mental health diagnosis (e.g., depression), they need to prove it resulted from a workplace exposure. But in other provinces, the presumptive legislation includes any mental health disorder. This means that, if a worker claims for depression resulting from workplace exposure, it is fast-tracked in the system just as it would if it were PTSD; there is no extra burden of proof. Australia has just established a similar presumptive legislation process for first responders, though it appears to be limited to PTSD claims only.

This is just one example of how an overly narrow focus on PTSD can have potentially adverse consequences for some first responders and veterans, and one potential way of addressing it. The point being, the mental health risk among veterans, first responders, and their families is broader than just PTSD.

GAP 4: A LACK OF SUFFICIENT EVIDENCE SUPPORTING ONGOING PROGRAMS

The review conducted in this chapter was clear: most programs currently in use either have only a small effect on end users, which may then decline or disappear over the next few months, or there are no demonstrated effects for the programs in these groups. The one exception may be for mindfulness-based interventions, but even there researchers and program specialists still have a lot of work to do, especially among veteran and first responder groups.

The gap, here, is not that the evidence doesn't exist, but that there has not been sufficient program iteration to address those poor effect sizes and to try and make programs more effective. Rarely are programs effective in their first iteration. Programs need to be developed, implemented, evaluated, changed based on the evaluation's findings, and then re-evaluated. This is the cycle of research and development. The evaluation team should be part of the overall program development group and would ideally be involved from the beginning. They help make sure the program is developed in such a way that the necessary short-,

medium-, and long-term outcomes can be measured and that the processes for implementing the program can be adequately assessed to be sure the overall program was put in place appropriately. There is a lot of skill in doing proper program evaluation and not everyone does it well. Some organizations, like the Canadian Evaluation Society, have the equivalent of a professional designation reserved for evaluators who have demonstrated sufficient knowledge and expertise in doing effective program evaluation. It is always recommended that program implementation teams include a highly experienced evaluator.

But it is not just the evaluators that are important. There needs to be organizational buy-in for the program development, implementation, and refinement. This last point, refinement, is the key because many programs need to be tweaked after implementation in order to maximize their effectiveness. This means program evaluation could run longer than expected, be more intensive, be more of a burden on some staff, and may need a great deal of flexibility on the part of leadership. Many organizations bristle at this level of complexity and want something done quickly and with little impact on day-to-day operations. Unfortunately, "quick and easy" is often antithetical to the goals of program development and evaluation. Therefore, organizations need to be more supportive. This benefits them, in the long run, because if a program works well, it should have a wide range of beneficial effects on the overall organization (i.e., effective programs bring larger returns on investment). But the key is, can the organization tolerate taking a longer-term focus?

Part of the problem around using programs without any known validity may be a function of the standards and guidance documents that call for such programs. That is, many of the guidance documents ask for prevention and early intervention programs to be implemented. The guidance documents do not specify that the programs have to have demonstrated validity, so it could be that organizations are just ticking a box – they are implementing programs with no known validity as an exercise in conforming to the guidelines. This may reduce their desire to help develop effect programs for use down the line and, obviously, should be avoided.

GAP 5: AN OVER-RELIANCE ON INDIVIDUALLY-ORIENTED PREVENTION PROGRAMMING

Most organizations seem to be overly focused on improving the mental health of employees by instituting some form of individually-based mental health education or resilience training for its at-risk employees. This puts the onus on the individual to manage their own workplace mental health when the cause of poor mental health is not solely tied to experiencing traumatic events while performing one's duty, but also includes non-traumatic organizational elements that the leadership can change. This is highly unfair and organizations need to shoulder much more of the burden of protecting its staff. The standards and guidance documents call for the organizations and the employees to share the burden of protecting the psychological safety of workers.

There are organizationally-focused approaches to reduce the mental health burden among first responders (and, to some extent, veterans) that need to be examined and further developed, some of which were identified in this review chapter. The most obvious approach is to reduce the occupational risks that are known to cause stress and increase poor mental health (e.g., work load, role overload, poor resources, low job control, organizational justice issues/fairness in the workplace, harassment). These are the evidence-based risks identified in most of the national standards and guidelines documents and supported by decades of research. Other occupational risks are operational and organizational workplace stressors unique to public safety personnel, such as the ones used by McCreary and colleagues in their study of the unique roles of workplace stressors and traumatic exposures on poor mental health outcomes across several public safety groups (e.g., McCreary, Cramm et al., 2018; McCreary, Groll et al., 2018; Taillieu et al., 2018). These types of stressors are often part of the organizational culture; the way first responder organizations do business and

can provide leaders with a glimpse of potential workplace issues their staff experience the most frustration over.

Another possible approach is to put more of the onus on managers. This builds on the research suggesting that teaching managers how to have confident and effective conversations about mental health can be very beneficial. While this research is still very new, it is promising and worth exploring. Some of this was discussed earlier with mention of the Australian RESPECT program, along with the caveat that they may not be feasible in organizations with little or no trust in management (itself a workplace stressor).

GAP 6: PROGRAMS ARE IMPLEMENTED WITHOUT AN APPROPRIATE UNDERSTANDING OF BEHAVIOR CHANGE

Program developers assume that each person will be affected by their program in the same way. In other words, everyone who takes a prevention program will internalize all the psychoeducation and will master all the skills taught to them. While we all know this is not realistic, and that programs will always be more helpful for some more than others, we assume that the reason for this is that some people paid more attention and did more work while others did not. But behavior change isn't as simple as that. We have decades of research showing us that behavior change is complex and sometimes contradictory.

There is a growing literature in the area of changing health behaviors that is helpful here. Most of the theory and research in this area supports the notion that interventions do not cause people to change their behaviors; rather, interventions cause people to change their ***intentions*** to change. Theories have evolved that help explain why some people are more ready, willing, and able to change their behaviors at a given time point, compared to other people. These theories, such as the Theory of Planned Behavior (Ajzen, 1991) and the Stages of Change Model (Prochaska et al., 1994), have been extensively tested and are being applied in a wide variety of health contexts.

For example, the Stages of Change Model posits that people who are contemplating or enacting change in a specific area are more susceptible to behavior change messages in that area. Consider, for example, stigma reduction programs. The goal behind most of these programs is that, if we can reduce the stigma surrounding mental ill health, people will be more likely to seek treatment when they experience poor mental health. However, a systematic review examining the associations between stigma and treatment seeking behavior revealed only a small median effect size (Clement et al., 2015). This means that mental health stigma plays only a small part in keeping people from seeking treatment for a mental health concern. However, Britt et al. (2016) showed that mental health stigma was significantly lower in men who were contemplating seeking treatment than in those not contemplating seeking treatment, suggesting that these men might be more amenable to a stigma reduction program aimed at getting people into treatment sooner. This is an empirical question, but one based in theory.

Future prevention and early intervention programs need to be developed with a behavior change model as part of their program logic. This should help maximize their effectiveness.

GAP 7: RELATIVE LACK OF FOCUS ON VETERANS, ESPECIALLY THOSE MOST AT-RISK

The review showed a relative lack of focus on mental ill health among veterans. While evidence suggests that not all veterans share the same risk for poor mental health after releasing from service, there are some groups that do have an elevated risk. These include those who experienced the effects of combat (though some research suggests just being deployed may be a factor), those who over-identify with military culture, and those who are experiencing ongoing physical health concerns as a result of their military career. A final

group may be those who experienced poor mental health and suicidality while in service, but are currently asymptomatic. The transition from active service to veteran status may be the most advantageous point of contact for prevention programs, though some post-transition programming may be needed. However, the question arises around whether programs focusing on veterans should be more prevention or treatment focused (i.e., among those experiencing poor mental health, chronic physical health concerns). More research needs to be conducted on the relative benefits of both.

GAP 8: RELATIVE LACK OF FOCUS ON FAMILIES, ESPECIALLY THOSE MOST AT-RISK

The only indication of programs available for families in the scientific review portion of this scoping exercise was an environmental scan within the military and veteran space. Specifically, the authors were looking at programs only for those families where the military or former military member was suffering from deployment-related mental ill health. Moreover, the review found very little evidence for the effectiveness of these programs in helping preventing or manage poor mental health within the families.

This lack of available evidence hints at a broader gap. That is, we know little of the mental health burden being experienced by families of veterans and first responders, especially compared to the general population. We also know little (if anything) about what might put certain families at greater risk of experiencing poor mental health compared to others. For example, are certain family members more at risk? Is age a factor? Is location important (e.g., rural vs. urban)? What about family configuration (e.g., single parent, gay/lesbian/trans couples)? This is an emerging area where strong, rigorous research can have a significant impact on identifying needs, program and policy development, and advocacy.

GAP 9: PROGRAMS THAT ASSESS THE PROCESSES OR INTERMEDIATE OUTCOMES, BUT NOT THE DESIRED OUTCOMES

I highlighted mindfulness-based interventions as a possible avenue for future mental ill health prevention programs. However, one of the key elements I noticed when reviewing the mindfulness-based research, but which I also saw in some of the other research, was a failure for some programs to be evaluated for their ultimate goal – to reduce mental ill health among users or program participants.

That is, some mindfulness-based programs were evaluated against their ability to increase mindful awareness, so the outcomes reported were increases in that construct. Some programs were evaluated against their ability to increase resilience, so those outcomes were measured using changes in self-reported resilience (however that was defined and measured). Other programs were evaluated against their ability to reduce stress in participants. While these are all excellent aims, when the ultimate goal of a program is to reduce the mental health burden on the employees involved with the program, it is important to measure changes in that burden, not just in its correlates.

In the future, if programs are implemented to manage the psychological health and safety of people in the workplace, they should assess psychological health outcomes. Specifically, they should measure poor mental health. This does not stop program evaluators from measuring other aspects of the program as well. For example, if a stress management program is being implemented to reduce worker stress, with the ultimate goal of reducing poor mental health, then the evaluators should be measuring changes in both stress and mental ill health. Advanced statistical modeling also could be used to highlight some of the processes that may have led to those changes.

GAP 10: PROGRAMS ARE IMPLEMENTED WITHOUT PROPER FIDELITY

As both Beshai & Carleton (2016) and Richin et al. (2019) noted, many early intervention programs are not implemented in the ways they were designed. Organizations used the bits and pieces they wanted and assumed that the program will be just as effective as the original. And many organizations, at least in Canada, do not appear to monitor how the program is presented by their CISM and peer support teams (Beshai & Carleton).

Fikretoglu et al. (2019) showed that, when R2MR was implemented without checks on whether the instructors were delivering the program according to the manual, students in those classes actually did worse than those in their control groups. Implementing programs in the way they were developed (i.e., program fidelity or integrity) is key to implementing an evidence-informed program. Deviating from the program's manual means program presenters are introducing a whole gamut of potential confounds into the program and potentially minimizing or distorting any positive effects (Perepletchikova & Kazdin, 2005).

Recent reviews of both mental health treatment programs (Cox et al., 2019) and workplace mental health programs (Easterbrook et al., 2019) showed that only a minority of papers mention treatment fidelity in the descriptions of their program methods or evaluation analyses. This suggests that most evaluations of workplace mental ill health prevention and early intervention, as well as suicide prevention, programs are not conducted with fidelity in mind.

This is an important methodological issue to address. It requires educating those involved in program development and evaluation, as well as organizations that want programs implemented, about the importance of fidelity. If organizations are going to spend the large amounts on both direct and indirect costs to implement a program, they should be getting the most for their money. Making sure that programs are implemented as they were designed and initially validated is key to that.

GAP 11: A LACK OF HIGH QUALITY EVIDENCE FOR THE EFFECTIVENESS OF SUICIDE PREVENTION PROGRAMS

As the review of workplace suicide prevention programs shows, there is very little evidence of their effectiveness. If workplaces are implementing them, they are either choosing not to evaluate their effectiveness or, if they are evaluating them, they are choosing not to publically release the findings of the evaluations. The former is problematic because it suggests a lack of interest in showing that the programs being implemented do what they say they are going to do. The latter is problematic because it impedes our understanding of what programs work and, if they do, how well they work.

Not only does there need to be more consistent evaluation of suicide prevention programs, but those evaluations also need to be of higher quality. As several of the reviewers who summarized the suicide prevention program literature noted, many of the programs have a high level of built-in bias, which impedes the interpretation of any and all findings: are the findings truly about the program's effectiveness or are the findings a function of the poorly designed evaluation? These confounds need to be teased out of the evaluations designs.

GAP 12: PREVENTION AND EARLY INTERVENTION PROGRAMS HAVE NOT APPLIED A GENDERED LENS

One of the main questions that researchers have not addressed is whether mental ill health prevention and early intervention programs are not working as believed, at least in part, because they have not been developed in a way that resonates with men. Decades of health promotion research has shown that men are

less attracted to health interventions, are less likely to take part in them, and are less likely to complete participation if they do sign up (Courtenay, 2011). We are only now learning how to attract men to health-related programs, and then keep them there.

This is an important consideration to address because the gender-balance within veterans communities and most first responder organizations is heavily tilted towards men. Most organizations are approximately 80% men or higher; the exception appears to be ambulance/EMT/paramedic services, which have recently achieved gender parity in most of the countries I am focusing on here. Thus, we need to look at whether the failure of prevention and early intervention programs can be partly explained by men's gender role socialization.

But, in addition to that, we need to examine the masculine nature of first responder workplaces and their cultures. That is male gender role norms can influence organizational and workplace cultures. Research shows that male-dominated workforces often come with a highly masculine work/organizational culture that can place high levels of social stigma on displays of personal weakness (e.g., taking sick leave; asking for a workplace accommodation for a mental or physical health concern). There is also a requirement to do one's job without placing any undue burden on your colleagues (e.g., taking sick leave means colleagues will need to cover the missing person's duties because there are not enough extra employees to cover fully for missing co-workers). These norms are often known elements of these types of organizations, so they tend to attract people who are looking to work in that kind of environment. Moreover, the organizations and the people in them reward those who follow these masculine-based guidelines, and can punish those who do not.

Berdahl et al. (2018) call these types of work environments Masculinity Contest Cultures (MCCs). They identified four main components to MCCs: *Show No Weakness* (e.g., be confident, always be correct, avoid displaying feminine-typed behaviors and emotions); *Strength and Stamina* (e.g., work long, work hard, don't take breaks or vacations); *Put Work First* (e.g., work is more important than friends or family; taking family or sick leave is not acceptable); and *Dog-Eat-Dog* (e.g., work is a hypercompetitive environment where there are winners and losers; win at all costs). Berdahl et al. identified military and first responder organizations as groups with higher levels of MCCs, and noted the adverse mental health implications for those working in these occupations.

With that said, more research needs to explore the impact of masculine workplace cultures on the uptake and effectiveness of mental ill health prevention and early intervention programs. Also worth exploring is whether adding a gendered lens to these programs (i.e., making them more palatable to men) might improve effectiveness.

CHAPTER SUMMARY

The purpose of this chapter was to review the existing scientific literature (both academic and grey) in order to identify mental ill health prevention and early intervention programs, as well as suicide prevention programs, used in veteran and first responder organizations (plus their families) across five countries: Canada, Australia, New Zealand, Ireland, and the UK. As a result of this review, I identified several shortcomings with the current state of affairs, resulting in 12 knowledge gaps being prioritized.

In summary, my review found little evidence to support the effectiveness or validity of workplace mental ill health prevention programs, especially among veterans and first responders. When programs were evaluated, the effect sizes tended to be small, which suggests people are not being helped much. Moreover, those same evaluations showed that any program effects are typically lost in the month or two after training. The one prevention approach that does seem to be effective is one-on-one training, but that is not very cost-

effective. A series of potential program design flaws were identified, but there has been no systematic research testing how these can be changed to improve mental ill health prevention programs.

Similar results were found in the early intervention research, which showed equally low effect sizes. More troubling was the finding that many organizations do not implement early intervention programs as they were initially developed; they tend to parcel out elements of the programs and adopt only those features they want. In many instances there was no indication of an evaluation to determine if the smaller, revised programs still worked.

There are some potentially interesting prevention and early intervention programs out there, and I highlighted four them (one prevention and three early intervention programs). There is also one very popular program (R2MR), especially within Canada, which I discussed in greater detail because the evidence does not support its continued use at this time.

In the suicide prevention area, there is evidence that gatekeeper programs can work, but that they do not work in every context. Apart from the small amount of research examining this issue, there is very little additional research examining the effectiveness of suicide prevention programs, which means that there are no really strong systematic reviews or meta-analyses available. This type of research is often challenging in first responder communities, but can be done well, as was shown by Mishra & Martin (2012).

One issue that program developers do not seem to be aware of, or do not want to acknowledge, is that psychoeducation does not appear to be as effective in a mental ill health prevention context as it is in a one-on-one clinical/therapeutic context. That is, within clinical settings, psychoeducation has been shown to be an effective treatment device. As a result, many of the prevention programs reviewed here call themselves evidence-based or evidence-informed because they are using the same (or similar) psychoeducational tools. In fact, the vast majority of programs developed and reviewed in this chapter relied heavily on psychoeducation for program content. But those programs, especially the ones focusing on first responders or veterans/serving military, did not lead to much improvement, if any (e.g., Hourani et al., 2011; Skeffington et al., 2014). When there was improvement, it tended to disappear shortly afterwards.

Why is this the case? My feeling is that there is a difference between people who have sought out treatment (i.e., effectiveness research in a clinical setting) and those who have not (i.e., effectiveness research in a prevention or early intervention context). I think of this as a function of the Stages of Change model (Prochaska et al., 1994) discussed in Gap #6: People who have decided to seek treatment for a mental health concern are in a more advanced stage of change; as a result, they are more open to behavior change messages about mental health, so they are more likely to take psychoeducation to heart and implement it into their daily lives. Plus they have regular contact with a psychological health professional to remind them of its importance and to reinforce the messaging. This means that research examining the effectiveness of psychoeducation in a clinical therapeutic context will likely show a strong effect size. However, when the same information is presented in a general, 1-4 hour long, workplace prevention program (either in-person or e-based), the vast majority of people in the audience are not contemplating seeking a mental health professional (i.e., they are in a less advanced stage of stage). As a result, they are not as open to the messaging, they are less likely to pay attention, and are more likely to forget the messaging shortly afterwards. This would lead to a smaller effect size for that prevention-based intervention. At least this is what the theory would predict. There is some evidence to support this notion (e.g., Britt et al., 2016), but we need more data to help us better understand the issue. In the meantime, I recommend program developers not place so much importance on the role of psychoeducation and perhaps pay more attention to behavior change models.

An additional concern is the potentially misguided belief that mental health education training programs can be taught and remembered after a single session. This makes no sense. The data I reviewed earlier showed that information is often lost shortly after training. This type of knowledge loss is similar to what is found in traditional, physical/medical first aid training. It is an accepted practice in that context that recertification is needed on an ongoing basis, so why has that idea not been adopted in mental health first aid and other mental health education and awareness training programs? To be cynical for a moment, belief in a one-and-done process suggests that many organizations are engaging in a tick-box approach to this type of training.

In summary, the data reviewed in this chapter suggest that we appear to have a long way to go before we have effective mental ill health prevention and early intervention programs, in general, and effective programs for veterans and first responders, in particular. Given the daily pressures first responder and veteran organizations face to implement something to help their people, there needs to be a more effective way of translating the current state of the science so that people know more about what science knows and what it can and cannot provide. We need to be able to manage people's expectations better while we work on the longer term goal of developing and refining programs through robust, iterative evaluation. To do this well, we need high levels of support from the organizations and the workers themselves.

CHAPTER 3: SUBJECT MATTER EXPERT INTERVIEWS

This chapter describes the information collected for the scoping review using Subject Matter Experts (SMEs). I first describe the methods used to collect that information, followed by an overview of the programs they identified, and the themes that emerged from the SME interviews. Finally, I will present a summary of the program-related knowledge gaps the SMEs identified.

METHOD FOR SUBJECT MATTER EXPERT INTERVIEWS

I first identified an initial series of SMEs in each country. These original SMEs were selected from my list of professional contacts because they worked in the areas identified by the scoping review. Most of the initial SMEs were academics or those working for governments or not-for-profits. Some worked for first responder organizations. I then used a snowball method, asking these original SMEs to identify other potential SMEs, especially those who worked at the senior leadership levels in first responder organizations.

When a SME was identified, they were contacted initially via email or LinkedIn. That message indicated that I had been contracted by The Movember Foundation to conduct an environmental scan of the mental ill health and suicide prevention, as well as early intervention, programs being used by veterans groups, first responders (police, fire, emergency medical technicians/paramedics), and their families, across five countries: Canada, Australia, New Zealand, Ireland, and the United Kingdom. I noted that I hoped they might be able to help me identify what those programs are, as well as some additional information around who has been using them. I also asked whether they would be able to help connect me other subject matter experts working in the veteran and first responder mental health and suicide prevention/early intervention spaces.

For those who agreed to participate, an interview time and platform (i.e., Zoom, Skype, FaceTime, WhatsApp, and telephone all were used for at least one interview) was established. The interviews were open-ended, with a series of potential questions serving as a template for the general types of questions I was seeking answers to (see Table 3.1). Additional questions could be asked by both parties. Some people wanted to participate but an interview time could not be set due to scheduling issues. In those cases, a list of the same potential questions was sent to the SMEs and they were asked to return them by a given date.

TABLE 3.1: POTENTIAL QUESTIONS FOR SUBJECT MATTER EXPERTS. THESE SERVED AS STARTING OFF POINTS FOR A DISCUSSION.

	I am interested in your answers to the following questions:
1.	What is your area of expertise (please highlight all that apply)? a) Mental Health Prevention b) Mental Health Early Intervention c) Suicide Prevention d) Suicide Postvention e) Veterans f) Police

	g) Firefighters h) EMS/Paramedics i) Families
2.	What country/countries do you work most in?
3.	How would you best describe yourself? Academic, Consultant, Employed by an Organization, Other (if Other, please describe)?
4.	What mental health prevention/early intervention/suicide prevention programs are organizations in your area using? (answer for as many areas as the SME feels competent to answer) a. What are the programs being used? b. Which organizations are using these? c. For each program discussed: How long have they been using these? d. For each program discussed: Who is the target: Employees, Families, or Both? e. For each program discussed: Are you aware of any data supporting the efficacy or effectiveness of these programs? In other words, is there evidence that they do what they say they do? If so, please elaborate and tell us what you know about the evidence base for these programs.
5.	What are the gaps you see when it comes to mental health prevention/early intervention/suicide prevention of the veterans or first responders in your main focus area? For example, are there specific issues that programs are not addressing? Are programs focusing too much on some things, but not on others (if so, what)?
6.	What are the gaps you see when it comes to mental health prevention/early intervention/suicide prevention in the families of veterans or first responders in your main focus area?
7.	Is there anything about this area that you feel I have missed? If so, please elaborate.
8.	Do you consent to having your name and email included in the list of SMEs at the end of the report?

A total of 25 interviews were conducted, with 24 conducted in real time and 1 person who returned their responses via email. The list of SMEs interviewed for this scoping review can be found in Appendix 1. Twelve other individuals were contacted and either did not reply to my email, agreed to participate but failed to follow through after several reminders, or asked to connect me with another expert. Thus, there was a 68% response rate to my requests.

When conducting interviews, it is important to note the point at which no new, substantive information was being collected. This is called saturation, which was reached after the 8th interview. Later interviews did

provide information about new programs, but in terms of approaches to mental ill health prevention and early intervention, suicide prevention, and programs for families, there was very little new important information after the saturation point. Thus, even with only 25 interviews, I am confident I did not miss any important programs or major trends.

PROGRAMS IDENTIFIED BY THE SUBJECT MATTER EXPERTS

Overall, the SMEs were able to identify various types of programs being used by first responder organizations. Relatively little was identified here that was specific to veterans groups. Programs for families were scarcer. The identified programs are listed in Table 3.2.

TABLE 3.2: LIST OF SME-IDENTIFIED MENTAL ILL HEALTH, EARLY INTERVENTION, AND SUICIDE PREVENTION PROGRAMS BEING USED BY FIRST RESPONDER AGENCIES OR VETERANS GROUPS

Program Type	Program Name	Countries in Use	Effectiveness Data
Mental Ill Health Prevention	Road to Mental Readiness (R2MR)	Canada, Australia	Two studies (including one Group RCT) showed no changes in mental health symptoms or stigma. One study showed stigma reduction.
	Psychoeducation: R2MR Mental Health Continuum Model	New Zealand, Australia	No evidence for effectiveness at reducing mental health symptoms was found.
	Psychoeducation: Five Ways to Well-Being at Work	New Zealand	The program was based on a theoretical proposal (Foresight Mental Capital and Wellbeing Project, 2008; Aked et al., 2008) and does not appear to have been formally evaluated for effectiveness. No evidence for effectiveness at reducing mental health symptoms was found.

	Mental Health Literacy Training	Australia	No evidence for effectiveness at reducing mental health symptoms was found.
	Stigma Reduction Training	Australia	No evidence for effectiveness at reducing mental health symptoms was found.
	Psychoeducation: Website Support (e.g., Bootsontheground.ca, bluespacewellbeing.com.au, oscarkilo.org.uk, letmeknow.org.au)	Australia, UK, Canada	No evidence for effectiveness at reducing mental health symptoms was found.
	Psychoeducation: App Support (e.g., Equipt)	Australia, UK, New Zealand, Canada	No evidence for effectiveness at reducing mental health symptoms was found.
	Resilient Minds at Work for Firefighters (based on a 4R Action Toolkit) (Canadian Mental Health Association BC): https://vancouver-fraser.cmha.bc.ca/programs-services/resilient-minds/	Canada	No evidence for effectiveness at reducing mental health symptoms was found.
	Firefighter Resiliency Program	Canada	Pilot data suggests the program is effective at reducing PTSD symptoms; a more complete evaluation needs to be done.
	Before Operational Stress (Wounded Warriors Canada): https://woundedwarriors.ca/our-programs/before-operational-stress/	Canada	No evidence for effectiveness at reducing mental health symptoms was found.

	MIND Blue Light (UK not-for-profit program; now closed): https://www.mind.org.uk/news-campaigns/campaigns/blue-light-support/about-the-blue-light-programme/?ctaId=/news-campaigns/campaigns/blue-light-support/slices/the-blue-light-programme-1/	UK	No evidence for effectiveness at reducing mental health symptoms was found. There is evidence that it increases awareness and may reduce stigma.
	Shaping Purpose: https://shapingpurpose.com/veterans/	Canada	A military to civilian transition training program. There is a qualitative program evaluation available, but no published evidence of improved mental health.
Mental Health Early Intervention	Mental Health First Aid	New Zealand, Canada, Australia	See Chapter 2 for review.
	Psychological First Aid	Australia, New Zealand, Canada	See Chapter 2 for review.
	MANERS Psychological First Aid Program	New Zealand	No evidence for effectiveness at reducing mental health symptoms was found for this specific variant of Psychological First Aid.
	Critical Incident Stress Debriefing and variants	Australia, New Zealand, Canada, UK	See Chapter 2 for review.
	Peer Support	Australia, New Zealand, Canada, UK	See Chapter 2 for review.

	Trauma Recovery Program for those with Subclinical PTSD	Australia	No evidence for effectiveness at reducing mental health symptoms was found.
	EAP Services	Australia, New Zealand, Canada, UK	No evidence for effectiveness at reducing mental health symptoms was found.
	HeadCoach: App designed to improve manager's confidence in talking with employees about mental health issues via mental health awareness training, helping concerned employees, and minimizing workplace risks (Black Dog Institute, Movember, Beyond Blue)	Australia	An initial test of the app suggests it may reduce the onset of new cases of depression in workplaces where managers are trained using the app, but those data have not published and are not publically available at this time.
	Chaplaincy Services	Australia, Ireland	No evidence for effectiveness at reducing mental health symptoms was found.
	Trauma Risk Management	UK	See Chapter 2 for review.
	External charitable organizations	UK	No evidence for effectiveness at reducing mental health symptoms was found.
Suicide Prevention or Postvention	ASIST (Applied Suicide Intervention Skills Training)	New Zealand, Australia	No evidence for effectiveness at reducing suicidality was found in this context. Research suggests gatekeeper

			training can work, but the evidence also shows that it may vary depending on context.
	QPR (Question, Persuade, Refer)	New Zealand	No evidence for effectiveness at reducing suicidality was found in this context. Research suggests gatekeeper training can work, but the evidence also shows that it may vary depending on context.
	Together for Life/Ensemble pour la vie	Canada	Evidence from a long-term research study suggests it is effective at reducing suicide in police.
	EAP Services	Australia, Canada, UK	No evidence for effectiveness at reducing suicidality was found in this context.
	Chaplaincy Services	Australia, Ireland	No evidence for effectiveness at reducing suicidality was found in this context.
	Mindframe Guidelines	Australia	No evidence for effectiveness at reducing suicidality was found in this context.
Families	Road to Mental Readiness	Canada	No available evidence for families.

	Chaplaincy Services	Australia	No evidence for effectiveness at reducing family members' mental health symptoms was found.
	EAP Services	Australia	No evidence available that EAPs work as mental health prevention for either employees or their families.

Once the individual programs were identified, a search was undertaken to identify whether there was any existing evidence for the program's efficacy (i.e., whether it works as it was designed under ideal circumstances) or effectiveness (i.e., whether it works as it was designed in normal, day-to-day circumstances). In most cases, we could find no evidence that the programs reduced symptoms of mental ill health and suicide risk. In other cases, the evidence for those programs was reviewed in Chapter 2.

There were some potentially promising programs identified. For programs focused on preventing mental ill health before exposure to a critical incident or trauma, it will be interesting to see what future evaluation data for the Firefighter Resilience Program show. This program was created by Duncan Shields, one of the Canadian SMEs for this report. It is an interactive, small group program designed to teach skills aimed at managing psychological well-being (e.g., stress management, active listening, psychoeducation) and normalizing work-related mental health concerns, noting that they represent a potential workplace injury just like physical injuries. Results from an initial pilot study suggest that reductions in participants' mental health symptoms were maintained 6 months post-training. It has since moved beyond firefighters to a local police force. However, as the creator and SME noted during our discussions, a series of more rigorous evaluations are needed before it can be called effective.

The Shaping Purpose™ program hopes to reduce the stress experienced by military members and their families as they transition to civilian lives. In their qualitative evaluation of the program, Shields et al. (2018) note that that the program:

"… guides individuals through a series of lectures, group discussions and exercises leading to a personal planning process aimed at clarifying participants' sense of purpose and meaning in their post CAF life and roles. The program works to assist individuals to identify their "gifts" (skills applicable to the civilian world), "passions" (interests and activities most crucial for ongoing well-being), and "values" (criteria for judging what is important and motivators of action) in order to inform the creation of a "Life Plan": a detailed multi-dimensional action plan. The process and resulting plan are proposed as a framework for CAF members and their families to think through the choices that they need to make, and concrete actions they need to take, to live an active, connected and contributing life." (p. 3)

While they did not report any quantitative evidence of reduced mental ill health among those taking the program, they did refer to an unpublished paper purporting to show evidence of such as relationship. However, I was unable to find that report so I cannot vouch for its findings. Still, even if the findings from this

quantitative report supported the program's goals, it would be ideal to be able to replicate the findings in a different context to be sure any findings are not situation-specific.

Regarding early intervention/crisis intervention programs, the SMEs reported that organizations were using many of the programs that were reviewed in Chapter 2. These included the CISM family of programs and the general notion of peer support. However, they also indicated use of a wider variety of early intervention programs, including variations on Mental Health/Psychological First Aid (see Chapter 2), the use of websites and apps that provided psychoeducation and links to resources, and even a mention of an external charity that helps members of a given community who need assistance. There were indications that Trauma Risk Management was being used beyond the UK policing environment, suggesting that more research is needed to evaluate its overall effectiveness.

One potentially interesting program was the HeadCoach manager training app developed by the Black Dog Institute in Australia (with funding from the Movember Foundation's 2014 Australian Men's Health Initiative[7]). It builds on some of the evidence summarized in Chapter 2 suggesting that training managers to be aware of situations where their staff are experiencing poor mental health, and then giving them the confidence to have helpful conversations with those employees, might be an effective approach to reducing mental health-related sick leave. The program adds to that by also including a mental health prevention component to it. While the evidence for its effectiveness is still at the early stages, it shows promise and it also helps reverse the trend of putting the onus on workers to manage their own workplace mental health; at least in organizations that are not tainted by issues of organizational/managerial mistrust.

In the suicide prevention space, there was evidence for the effectiveness of the Together for Life (Ensemble pour la vie) program created by the Montréal Police. The original article showing the evidence for the program's effectiveness was by Mishara and Martin (2012). However, one of the SMEs indicated that a manuscript updating the initial findings from this prevention program is in development and that the findings from the original paper continue to hold true today: the program still is effective at reducing suicide rates within the Montréal Police.

One other point that came out of the search for programs is that some SMEs working for first responder agencies indicated that they relied on their Employee Assistance Programs (EAPs) to address the organizations' early intervention and suicide prevention needs. Employees were encouraged to seek help from EAPs if they are experiencing signs on poor mental health. However, as research has shown, a large number of people who meet criteria for poor mental health do not recognize the need and have not sought treatment (e.g., Gulliver et al., 2010). This is especially the case for men (Seidler et al., 2016). The goal of early intervention programs is to help reduce the probability of the onset of mental health symptoms, reduce potential symptom severity, identify those who may need treatment early, and get them into treatment as soon as possible. Thus, while EAP services can provide a way forward for treatment, there is no evidence that they work well in this type of prevention context. The same is true for suicide prevention, where gatekeeper programs appear to show the most promise, at least in policing contexts. The effectiveness for the Together for Life (Ensemble pour la vie) program may be, in part, because the program is not reliant on individuals self-identifying for help. Moreover, some SMEs indicated that, at least in their context, EAP-referred psychotherapists are often not trusted by employees. This may be part of a larger workplace trust issue, but it is an important factor to consider.

[7] For the sake of transparency, I wish to note that I chaired the 2014 Australian Men's Health Initiative grant competition for the Movember Foundation from which this research received its funding.

EMERGING THEMES ABOUT PROGRAMS

Because of the wide-ranging conversations around the notions of mental ill health prevention, early intervention, and suicide prevention programs, I reviewed the SME discussions with the goal of identifying any emergent themes about the development and implementation of these types of programs. The themes mentioned below are those that came from interviews with several SMEs and are not just a single person's concern. For privacy reasons, no individual person or organization will be identified in this section. Also, points that emerged from these discussions will be paraphrased and no direct quotes will be used unless it can be certain it will not identify the individual.

Additionally, as these are emergent (as opposed to *a priori*) themes, I was unable to ask the SMEs their thoughts on overcoming them. Thus, I will elaborate on the content somewhat, but will rarely provide any potential solutions so as not to risk confounding my thoughts and those of the SMEs. Any solutions will need to be developed within the various organizational structures themselves.

THEME 1: THERE ARE NO VALIDATED MENTAL ILL HEALTH PREVENTION PROGRAMS AVAILABLE

Many of the SMEs, both the applied researchers who develop and validate programs and those who work within the first responder and veteran spaces themselves, noted that there is a dearth of mental ill health prevention programming available that has been subjected to rigorous (if any) validation. The SMEs could not identify a single program that had demonstrated effectiveness. Some thought that R2MR was a valid program and were very surprised when I described the findings from the only three studies that have examined its effectiveness.

However, these people are working within a context where there is constant demand to implement something that works and to do it immediately. Many senior managers and end users do not understand the complexity of program development and validation, as well as where the current state of where the science is (or rather isn't) when it comes to mental ill health prevention. Moreover, many SMEs mentioned the difficulties of validating a new program within the organizations themselves. Senior management often will not provide the resources necessary to be sure that the program has been implemented in the right way and that it is doing what it says it is supposed to do.

From my perspective, it appears that the needs and desires of senior management and the program's end users are not in line with what science currently has to offer and can potentially offer if given the chance. Their expectations are, therefore, unrealistic and there appears to be no one working in this space that is able to effectively manage those expectations. There is a need to better educate all parties about the current mental ill health prevention program evidence base, the importance of proper implementation and evaluation, and the time it takes to conduct quality research. There is also a need to educate people (especially organizational leaders) that quality research can, and should, be done in applied settings.

THEME 2: EVERYONE APPEARS TO BE WORKING ON THEIR OWN

A wide range of SMEs noted that individual services are on their own when it comes to developing mental ill health prevention programs. When I note the phrase "individual services", I am not referring to the distinction between first responder occupations (police, fire, ambulance). Rather, I am referring to single first responder services (e.g., ambulance or police) in a specific community. For example, the ambulance services in one community appear to be on their own when it comes to deciding what to do *via a vis* implementing a mental ill health prevention program; ambulance services in other communities may be doing something different,

and there appears to be little cross communication or collaboration. This is not the case across all five countries, but it appeared to be common in Canada and, to some extent, Australia.

Some larger organizations have taken it upon themselves to develop their own programs; these organizations tend to have larger budgets and greater specialized staff resources. Smaller organizations typically consult with individual specialists who advise on the types of interventions they can implement within their limited budgets and staffing resources.

From my perspective, this approach has several potential concerns. First, many individual agencies lack the resources to properly evaluate the evidence for existing programs. They also may lack the skillset to hire the right people to fill that gap. That is, the contracting process can be influenced by marketing savvy and grant writing skills on the part of the applicant, especially in situations where people are contracting beyond their areas of expertise. Therefore, organizations (especially smaller ones) may not get the best advice or the right program for their needs. It is almost like the luck of the draw.

Related to this is a second potential problem: When smaller agencies do implement a program, they may not have the staffing resources to implement it the way it was designed. This was highlighted as a concern by the respondents in Beshai & Carleton's (2016) survey of Canadian first responder organizations. Moreover, smaller agencies also may not have the resources to effectively evaluate the program's effectiveness. In the first scenario, there are issues of program fidelity to contend with. As I showed in Chapter 2, a lack of program fidelity can have serious repercussions on a program's ability to do what it says it's supposed to do (including the potential to do harm). In the second scenario, a lack of trained professionals may mean that organizations rely more on whether people liked the program, rather than whether it worked. The two are far from the same thing. Whether or not a program is liked has no bearing on whether it worked.

A third potential problem is that this distributed process, versus a more centralized process, can have an impact on training. It is always a good idea to begin mental ill health prevention training as soon as possible. In the case of first responders, that would be in their training schools. However, as some SMEs noted, if different organizational elements within the same occupation are using different approaches to mental ill health prevention, then it becomes difficult for the training schools to provide that initial exposure to the material; the material will be different depending on where in the organization the student ends up getting a job.

These are just some issues related to a lack of coordinated oversight and leadership in this area. However, there are some strengths to allowing individual organizations to have significant input to the types of programs developed and implemented. Several organizations have various logistical barriers to program implementation. For example, some SMEs highlighted the large territory covered by some first responder organizations. This is common across both Australia and New Zealand, as well as in some Canadian jurisdictions, and poses problems for how programs are rolled out (e.g., in-person vs. web-based), how resources are allocated (e.g., peer support or CISM team locations), and increased costs for program maintenance. Moreover, outside of large urban/suburban centres, many first responder organizations (especially in Australia and New Zealand) rely on volunteers. The demands and expectations of volunteers can be different from paid staff, but so can their experiences and their psychosocial risks. This latter point was raised by several SMEs.

Thus, there are many challenges to developing and implementing mental ill health prevention (and early intervention) programs. While a top down approach has some benefits, the ability for organizations to feed in their special requirements is also needed. Finding some form of balance is important.

THEME 3: ORGANIZATIONS ARE TRYING TO FIND A BALANCE BETWEEN DOING THE JOB AND PROTECTING THEIR PEOPLE

It is obvious that most veteran and first responder organizations are highly motivated to improve the psychological health and well-being of their constituents. This came through from many (but not all) of my SME interviews. However, there are logistical issues and other organizational barriers that often cannot be addressed simply by developing an organizational mental health strategy and implementing employee-focused prevention and early intervention programs.

One issue that emerged was that most organizations are constrained by a workforce that is pushed to the limits in terms of hours worked. Several SMEs commented on the increase in calls without an increase in human resources to deal with them. Other SMEs noted that technology had increased workloads for staff and was making it difficult for workers to turn off and engage in self-care. The lack of resources most often commented upon was human, and it was typically mentioned within the context of not having enough replacement staff to fill gaps left by people going on sick leave (for either physical or mental health concerns) or vacation/holiday; and it was often remarked that staff know this. Several SMEs noted that staff will resist taking time off for self-care, and even sick leave, because doing so makes the lives of their colleagues much harder. Most organizations are seeing no increase in staffing numbers, while some reported losing significant numbers of staff to other government agencies. Only one first responder organization mentioned they had received additional money to hire more people to offset illness-related shortages.

A second issue related to this theme concerns the balance between the individual and the organization when addressing the known causes of psychological poor health in the workplace. As I noted in Chapter 2, most countries have established evidence-based guidelines or standards that focus on issues such as excessive workload, role overload, low job control, low levels of resources, and other job stressors. However, talking with the SMEs confirmed that most organizations are not attempting to change the known workplace stressors emphasized in these guidance documents. Rather, they seem to be putting most of the burden for protecting employee psychological health on the individual workers themselves (though individual “resilience training”), whereas the guidance documents emphasize the importance of balancing responsibility between the two.

Workplaces need to address issues of lack of resources and excessive workload or risk a mentally unwell workforce. Part of this can be achieved by finding a better balance between individual resilience training and addressing the concerns from the psychological safety in the workplace guidance documents, especially given the mature state of the research showing that factors like shift work, high job demand, and low job control are important causes of poor workplace-related mental health. However, the biggest barrier is overwork and that means hiring more staff. This is not an area where organizations can “do more with less” without psychologically harming their operational staff.

THEME 4: NO ONE SEEMS TO BE AWARE OF THE EVIDENCE LIMITATIONS FOR EARLY INTERVENTION PROGRAMS

When I asked SMEs about their early intervention programs, everyone indicated that the organizations they work with, or work for, use peer support and CISM-based models. None of the organizations appeared to have completed an evaluation of these programs to determine their effectiveness within their own organizations; they assumed they were evidence-based and that they were effective. However, based on the findings from the Beshai and Carleton (2016), NICE (2005, 2018), and Richin et al. (2019), there is very limited evidence of the effectiveness of these models in first responder groups. Moreover, there is evidence that organizations

may not implement the programs as they were initially developed, causing significant concerns with program fidelity and effectiveness.

There needs to be a greater awareness of the limitations of how peer support and CISM-based interventions are implemented, as well as the relative lack of strong support for their effectiveness. Organizations need to be encouraged to evaluate their programs for effectiveness and, if found lacking, work with experts to find ways to improve them. However, given that these programs are already implemented, program evaluators will have a challenging time doing so. But with the proper controls in place, they should be able to generate some decent data that will help organizations better understand what these programs actually do, or don't do.

THEME 5: NO ONE IS APPLYING A GENDERED LENS TO THE PROGRAMS THEY DEVELOP AND IMPLEMENT

Several SMEs discussed the gendered nature of the veteran and first responder workforces. Military veterans tend to be mostly male, with those having been exposed to combat even more likely to be male (i.e., some military occupations are more highly gendered than others). Police and fire services also tend to be very male dominated, while ambulance/EMT/paramedic organizations have become more gender balanced in recent years. Along with the gendered nature of the workforce, many SMEs noted the stoic, masculine workplace culture in each of these groups (even in ambulance/EMT/paramedic organizations). Military and first responders are trained to focus on getting a job done, and not showing any weakness during the process is part of how they do their jobs. Taking time for self-care is often seen as a sign of weakness.

Some SMEs wondered whether programs were created and implemented in a way that spoke to, or resonated with, men. To put it another way, they wondered if the way programs were designed and implemented were keeping men away, making it harder for men to be involved, and impairing the effectiveness of the programs. This is not something many people in the veteran and first responder communities are thinking about, because they are part of those communities and that's not how they think. These thoughts come mostly from people who work with those communities, but are housed on the outside. They can see these communities more clearly in some ways; especially the gendered nature of their organizational cultures.

Thus, there are two elements here that need to be examined: the effects both masculine workplace cultures and male gender role socialization have on program utilization and success. There needs to be more research exploring how gender may influence program effectiveness and whether applying a more masculine lens to the program material might be one way of making them more effective.

THEME 6: THERE MAY BE COHORT DIFFERENCES IN MENTAL HEALTH PREVENTION EXPECTATIONS

Several SMEs noted that younger first responders, compared to their older colleagues, have different expectations for managing their careers. In many first responder organizations, these newer staff members are trained differently. Most come with college or university degrees; an undergraduate degree is sometimes a minimum prerequisite of the job. These people are expecting to make this job a career and recognize that psychological stress management is an important part of that job. They want mental ill health prevention training, as well as knowing that there are available crisis management supports. However, they also want things like flexible work schedules so they can balance work and their personal or family lives. And the SMEs noted that many younger recruits are more willing to walk away from the job if it becomes interpersonally toxic or they feel their managers are not supporting their mental health.

In other words, there is the suggestion that this newer generation of first responder is more willing to talk about the mental health-related risks of the job and how best to mitigate it. Further research is needed to better understand how wide-spread the ideas shared by the SMEs are, how these attitudes and beliefs fit in with existing stoic workplace cultures, and how they might influence mental ill health prevention programming. However, many organizations appear to be taking this at least somewhat seriously. Several SMEs with operational experience indicated that first responder organizations are increasing options for flexible work and are exploring other options as well (e.g., part-time work).

GAPS IDENTIFIED BY THE SUBJECT MATTER EXPERTS

Many of the gaps that emerged from the literature review conducted in Chapter 2 also emerged from the SME discussions. Moreover, many of the emergent themes I discussed earlier could also be construed as gaps. I will do my best in this section to minimize the overlap.

GAP 1: WE DON'T KNOW WHAT'S EFFECTIVE

Many of the SMEs indicated that, of the existing programs out there, there was not a lot of knowledge about what programs were effective. Maybe people, they said, assumed that the programs were effective because they know someone who took it, heard about it, or liked it. This type of information dissemination can be problematic, especially in organizations that lack the human resources capability to review the existing evidence, or identify a lack of existing evidence as a concern.

Two SMEs indicated that a centralized resource, where first responder or veteran organizations could go to find this type of information, would be helpful. The logistics of who would run it, how it would be run, and what types of information would be most beneficial were not provided.

GAP 2: THERE'S TOO MUCH FOCUS ON PTSD

There was an interesting dichotomy that emerged from the SME interviews. All of the researchers (academic, government, not for profit) and some (but not all) of those working in the veteran and first responder contexts noted that there was too much discussion in veteran and first responder groups on PTSD. They all noted that mental ill health concerns in these groups went beyond just PTSD, and that managers, leaders, and health professionals needed to be aware of these other concerns. This issue came up especially around discussions of workers compensation claims and presumptive legislation in Canada and Australia. That is, in some locations, first responders filing claims have no real burden of proof in claims for work-related PTSD, but often have a substantial burden of proof if they are claiming for work-related depression, generalized anxiety, etc.

Thus, discussions around work-related psychological risks for first responders and veterans need to focus on a wider array of potential outcomes. Moreover, different mental health disorders may require different types of interventions or planning (e.g., return to work; stay at work on modified duties). All of this needs to be considered.

GAP 3: THERE'S TOO MUCH FOCUS ON INDIVIDUAL RESILIENCE, AS OPPOSED TO THE ORGANIZATIONAL BARRIERS TO WELL-BEING

As I noted earlier, the focus on individual worker resilience places an undue burden on the individual to protect and manage their psychological health from workplace hazards. Many SMEs noted that organizations are not doing enough to protect their employees from known workplace causes of poor mental health. This

was also an identified gap from Chapter 2's review of the academic and grey scientific literatures, so I will not repeat myself here. However, it is important to note that both academic and government researchers, as well as some first responder SMEs identified at least some aspects of this as a gap. Several identified the important role of leaders and their ability to communicate well with their staff about poor mental health.

GAP 4: WE NEED TO FOCUS MORE ON TRANSITIONS (RECRUITMENT, RETIREMENT) ALONG WITH EVERYTHING IN BETWEEN

Many SMEs noted that we need to take a lifespan or career-based approach when focusing on mental ill health and suicide prevention in veterans and first responders, as well as their families. While leaders and policy makers tend to focus only on those who are currently employed as first responders and military members, we need to go beyond that and explore how people transition out of one career and into another (including retirement and sick leave or disability leave). Veterans are a prime example of a group who have done this. And, as the Canadian Life After Service Study showed (see Chapter 2), not everyone has a smooth transition. The Shaping Purpose™ program discussed earlier may be effective at reducing that transition strain, and may even be generalizable to other contexts. However, the program is proprietary, meaning that organizations will have to pay them or its licensees to implement it. Additionally, it is not clear whether companies running programs like this are open to conducting a rigorous evaluation of the program's effectiveness at reducing transition-related stress and strain, and making the results of that evaluation open to all. On the plus side, the programs are usually manualized and the instructors tend to be well-trained, meaning that there should be program fidelity. Still, I bring these up because they tend to be some of the issues organizations face when prevention programs are proprietary.

Some SMEs noted that there are many ways that employees leave an organization, with the main distinction being voluntarily vs. non-voluntarily. By this, the SMEs mean that retirement is typically seen as a voluntary departure. However, there are many cases where individuals are pushed out of organizations: physical and psychological health concerns or disabilities were raised as prime examples. It was mentioned that many first responder organizations demand their employees be physically and psychologically healthy and, if they are not, they often do not have other roles they can funnel them to. As a result, the ill and injured are sometimes asked or told to leave. One suggested approach for reducing the stress and psychological strain in these types of situations is to find ways to use the skills of individuals who can no longer perform their primary duties. A potential second approach would be to ease the transition in some, as yet undecided, way.

GAP 5: THE STOIC ORGANIZATIONAL CULTURE CAN BE A BARRIER TO MENTAL HEALTH PREVENTION

Several of the SMEs highlighted the hyper-masculine nature of military and first responder organizational cultures. Those working with ambulance/paramedic/EMT organizations noted that, even though their workforces are now close to gender parity, middle and senior management roles are still almost all filled by men. This contributes to the maintenance of what one SME has called a *stoic service culture*. The main element of this type of culture is a sense that people can and should endure physical or emotional pain without showing signs of it. Past research has shown that stoicism (also referred to as emotional control) is more commonly associated with traditionally male gender role norms and is associated with poor mental health, including increased suicidality (Pirkis et al., 2017).

Understanding the ways in which stoic organizational cultures adversely impact on the mental health of veterans and first responders, as well as their families is an important first step. This should be done in tandem with the gap I identified in Chapter 2 that address the ways in which traditional male gender norms

might be adversely influences the uptake and effectiveness of prevention and early intervention programs, as well as Theme 5 which I described earlier in this chapter.

GAP 6: WE NEED MORE RESEARCH AND EVIDENCE GATHERING

Along with the need to know more about which programs are effective at preventing or reducing the poor mental health in veterans and first responders, several SMEs indicated that they also need more information about the mental ill health prevalence rates of these groups, as well as their families. Most countries do not collect population-level, high quality data on the mental health burden of veterans, first responders, and their families. This puts organizations in the position of needing and wanting to protect the psychological health of their staff, but not knowing how bad the problem is. Smaller studies are dependent on convenience samples, which can be comprised mostly by those who are motivated to take the time to complete a questionnaire that someone sent them a link to. There are typically higher participation rates when government agencies recruit research participants, in part because their privacy and confidentiality rules tend to be enshrined in law.

Many SMEs noted that organizations are often left to use sick leave and EAP data to determine the prevalence of mental ill health, as well as the effectiveness of program interventions. However, as I've said before, this is not a good practice because research shows that many people who have mental health concerns do not seek treatment or take leave – at least not until they absolutely have to. Thus, there is a high level of mental health-related presenteeism in workforces, especially those dominated by men.

One of the factors influencing the lack of data is financial. That is, organizations cannot often afford to have an external organization come in and conduct a rigorous, population-based survey of their workers' mental health on a regular basis. But a second factor that some SMEs identified was the local or national data privacy laws that limit the collection of needed data in sufficient detail to help plan and build an effective workplace mental health strategy and associated interventions.

CHAPTER SUMMARY

The goal of this chapter was to expand on the scientific review conducted in Chapter 2 by asking SMEs in each of the five target countries about the types of mental ill health prevention/early intervention and suicide prevention programs being used in veteran and first responder organizations, as well as their perceptions of the current knowledge gaps in these areas.

In general, the SMEs identified many types of programs being used in most of the areas. Several of those were reviewed in Chapter 2. For most of the new programs, there was no evidence available about their effectiveness at preventing mental ill health symptoms. There were two exceptions, the Firefighter Resilience Program and Shaping Purposes™. For the Firefighter Resilience Program, there was initial pilot data suggesting potential effectiveness, but a larger and more robust evaluation is called for. The Shaping Purposes™ program has some qualitative evidence supporting its potential, but quantitative evidence that it minimizes psychological strain in those who have taken the course versus those who haven't is lacking.

Discussions with the SMEs revealed several emergent themes and knowledge gaps, all of which can influence the future direction of program development in this area. Of key interest is the importance of having high quality data to understand the mental health burden and suicide risk of people in these occupations. Without this information, organizations are left with individual studies relying on convenience samples of motivated individuals and may not be attracting those who have been burned out by the system and have no energy to perform anything but their daily work tasks. This approach may also not attract those who have lost trust in their organizations to do something about the issue once they get the data. Organizations are also left with

trying to find alternative data sources and many will fall back on EAP and sick leave data, both of which are unable to provide accurate estimates of mental ill health prevalence.

Along with the issue of access to high quality data, the importance of having access to highly trained staff who can review the evidence for a specific program's effectiveness, as well as develop and implement a rigorous program evaluation, may be an important issue. Because organizations do not have access to these people, they may not know enough about how to evaluate the evidence (vs. the marketing) for specific programs. This can explain how some programs have been implemented without available evidence for their effectiveness. Organizations may also not know that they should not split programs into their parts and only use some elements. While these are specific examples of problems faced by organizations, both large and small, it leads to an important question: if governments and organizations are invested in the mental health of veterans and first responders, then they should work with those organizations to identify, select, implement, and evaluate mental ill health prevention programs, early intervention programs, suicide prevention programs, and programs for families. And since most organizations are having their operational budgets cut, rather than enhanced, it should not be expected that organizations find the money for this out of their own budgets. A third party agency could be developed in each country that houses experts in the science of workplace mental health prevention, early intervention, and suicide prevention, as well in the implementation and evaluation of those programs. That agency would work with these types of organizations to provide needed advice and expertise in program development, implementation, and evaluation.

In summary, the SMEs' experiences appeared to reinforce the findings from Chapter 2, but also add depth to them. They provided the necessary context in which program need, development, and implementation can be examined.

CHAPTER 4: INTERNET AND SOCIAL MEDIA SEARCH

This chapter describes an internet-based search for additional mental ill health prevention and early intervention programs, as well as suicide prevention programs, for veterans, first responders, and their families, in the five key countries targeted by this review: Canada, Australia, New Zealand, Ireland, and the UK. The main goals are to identify (a) potentially new programs, (b) programs not yet reviewed in the academic and grey aspects of the scientific literature (Chapter 2), and (c) programs not identified by the Subject Matter Experts (Chapter 3). A secondary goal was to then determine whether there is any available evidence for each new program's effectiveness, especially in the targeted groups.

The methods used for this review will be discussed first, followed by a description of the findings. The programs will be presented by country. Within each country, the focus (Prevention, Early Intervention, Suicide Prevention) and the target group (Police, Firefighter, Ambulance, Veteran, Families) will be identified.[8]

METHODS

This section will describe the search parameters, as well as the issue of what is, or is not, a program.

THE INTERNET SEARCH PARAMETERS

My team and I searched Google and three of the main social media platforms (Facebook, Twitter, and LinkedIn) for evidence of additional programs. We used the following search parameters:

For Google, the following English search parameters were used:

- "prevention suicide program" AND "police" OR "law enforcement" OR "firefighters" OR "paramedics" OR "EMT" OR "correctional services"
- "postvention suicide program" AND "police" OR "law enforcement" OR "firefighters" OR "paramedics" OR "EMT" OR "correctional services"
- "Mental health prevention training" AND "police" OR "law enforcement" OR "firefighters" OR "paramedics" OR "EMT" OR "correctional services"
- "mental health" AND "training" OR "program" OR "first aid" AND "police" OR "law enforcement" OR "firefighters" OR "paramedics" OR "EMT" OR "correctional services"
- "debriefing programs police" AND "police" OR "law enforcement" OR "firefighters" OR "paramedics" OR "EMT" OR "correctional services"
- "Critical incident stress management" AND "police" OR "law enforcement" OR "firefighters" OR "paramedics" OR "EMT" OR "correctional services"
- "Peer support" AND "police" OR "law enforcement" OR "firefighters" OR "paramedics" OR "EMT" OR "correctional services"

For Google, the following French search parameters were used:

- "soutien psychologique" ET "police" OU "pompier" OU "premiers répondants"
- "programme santé mentale" ET police" OU "pompier" OU "premiers répondants"

[8] I wish to extend a special thank you to my two research assistants, Andreanne Angehrn and Robyn Shields, from the University of Regina. Their time was supported by an in-kind contribution from the Canadian Institute of Public Safety Research and Treatment.

- “soutien par les pairs police” ET “police”
- “prévention suicide” ET “police” OU “pompier” OU “premiers répondants” OU “postvention suicide”

For Twitter, our initial searches using the keywords above identified several hashtags that we later searched:

#ItsOKnottobeOK, #ItsOKtotalk, #Endthestigma, #SuicidePrevention, #SuicidePostvention, #StopSuicidePolice, #SuicideIntervention, #PoliceMentalHealth, #emscultureofsafety, #emsmentalhealth, #AreYouOk, #fittofightfire, #firefightermentalhealth

For LinkedIn and Facebook, we searched using a Boolean-style approach. This meant using similar terms to the Google English search parameters.

WHAT IS, OR IS NOT, A PROGRAM?

We identified several potential programs. However, it became immediately clear that some of what we were finding online was not programmatic in nature. Some of it was motivational speaking, some was not based on any identifiable scientific principles, and some was not being implemented in a way that it could be evaluated. And some programs that people identified as prevention or early intervention were actually more tertiary prevention and aimed at making treatment more easily accessible (e.g., EAPs). As such, it became necessary to create a series of inclusion/exclusion criteria to help define what a program is for the sake of better documenting what we found online. This approach is similar to what the authors of the systematic reviews and meta-analyses used in Chapter 2 did. Using this type of criteria also allows me to be clear about what types of programs I am not including in this chapter. The following criteria helped me define what is, or is not, a program.

<u>Inclusion criteria</u> (i.e., what a program is):

- A formal mental ill health- or suicide-focused prevention/early intervention program has a purpose-built curriculum that is designed to be taught or given to others, and then implemented by the learners. Potential sub-elements may include the following:
    - It may or may not have support tools (e.g., apps, other web-based tools, pocket cards, books, peer support) built into the program;
    - It may be a one-off training session or it may need regular, ongoing maintenance sessions, but this distinction needs to be made clear in the program design and implementation;
    - Ideally, there should be an emphasis on program fidelity, in order to control for instructor-based effects (i.e., it should work equally well across all instructors who implement the program as instructed); all instructors must follow the same implementation approach, with nothing added or subtracted.
- It will be based on accepted scientific principles and mechanisms (e.g., cognitive behavior therapy, psychoeducation). If those scientific principles or mechanisms are being used in any way that is different from the original, supporting efficacy or effectiveness data (e.g., using clinical intervention procedures, such as diaphragmatic breathing, in a prevention approach), that program cannot be termed evidence-based until a proper evaluation is conducted.
- There will be specific outcomes built into the program (e.g., reduction in mental health symptoms), such that efficacy and effectiveness are measurable. In other words, there must be a way to determine that the program does what it says it is supposed to do.
- Peer support programs are often a common approach to mental health risks in high stress workplaces, or workplaces with the potential for traumatic experiences. These types of programs attempt to connect someone undergoing a potential mental health problem with someone who can

help. That person may or may not have lived experience in the area. The peer will act as a social support mechanism, and potentially as a connection to local health resources. These types of programs will be included only under certain conditions:

- The peers must come from the same occupational grouping as the person experiencing problems;
- The following elements must be included in the program: (1) there must be training provided to the peer support providers (e.g., Mental Health First Aid); (2) the roles of the peer-mentee relationship must be clearly defined; (3) there must be appropriate, clearly stated goals for the program (e.g., a reduction in mental health symptoms); and (4) those goals must be testable in order to determine if the program does what it says it is supposed to do;
- There must be adequate support from mental health professionals.

Exclusion criteria (i.e., what a program is not):

- Motivational speakers are not delivering programs.
- Informal, one-off sessions by a person or persons with lived experience are not programs.
- When the foundations of what is being presented are not based on scientific principles or mechanisms, it is not a program.
- When what is being taught or presented is neither designed nor implemented in a way that can test whether the appropriate outcomes are being achieved, they are not programs.

Applying these criteria to the findings reported below meant that some of the identified websites could not be included. In most cases, the reason for this was that those sites supplied users with basic information without any forms of psychoeducation (i.e., the accepted scientific mechanism), or links to other sites that provided the psychoeducation. Moreover, there was often no indication that there were mechanisms in place to measure their effectiveness. As such, they did not meet the definition of a program. I did include some sites that aggregated lists of training courses for their constituents because those sites served as a single point of contact for many members of their occupation; this makes finding and registering for courses easier because they can bypass the search for each individual provider. For some peer support programs, I often could not confirm that all inclusion criteria were included, so I left them in just in case.

FINDINGS: CANADA

Overall, the search for additional mental ill health prevention, early intervention, and suicide prevention programs in Canada revealed not many new programs; mostly it showed the presence of third party sources that provide training for previously developed programs. In some cases, those organizations advertise their training courses on their own websites; in other cases, the information about courses gets cross-posted to not-for-profit groups dedicated to protecting the mental health of various first responder or public safety occupational groups. This approach was exemplified by the Badge of Life Canada, whose website provides lists of updated third party training courses relevant to their users (polices and corrections officers). A similar approach is used by the BC First Responder's Mental Health website. They have some of their own psychoeducational materials, but also a list of potential third party training programs.

Some first responder organizations, such as the Ontario Provincial Police, provide an information page of the types of programs they use to support their employees' mental ill health prevention, early intervention, and treatment. These websites appear to be more information-based, providing brief synopses of the programs provided, links to external agencies, and phone numbers for people to call in a crisis. It was included because it linked to actual programs that were not yet covered by this review. Other websites, such as one for the

Royal Canadian Mounted Police's Operational Stress Injury Support program, only provides contact information for their EAP service. This appears to be a program devoted to treatment, not prevention or early intervention.

Simon Fraser University is offering a certificate training program focusing on first responder trauma prevention (https://www.sfu.ca/continuing-studies/programs/first-responders-trauma-prevention-and-recovery-certificate/why-this-program.html). The website suggests that the program is teaching basic psychoeducation around workplace mental health concerns for first responders, as well as issues around the Canadian standards documents. However, it also notes that graduates will be able to establish peer support programs. There is no indication if there is any training in the review of scientific evidence supporting these programs, or any critical review or evaluation skills, as part of the curriculum. For example, will they be teaching students to implement programs for which there is very little, poor, or no evidence of effectiveness?

A review of programs for veterans suggests that there appear to be some portals for veterans and their families that offer a certain degree of support, but those appear to be reactionary rather than preventative. As such, they were not included here.

The only regular programing available to families appears to be around access to EAPs. However, at that point in the process, people are typically dealing with the need for treatment rather than prevention, so they were not included here either.

TABLE 4.1: ADDITIONAL CANADIAN PROGRAMS IDENTIFIED THROUGH A WEB-BASED SEARCH

Organization	Program Name	Target Audience	Focus	Evidence of Effectiveness
Ontario Provincial Police (Wellness Unit)	Not Myself Today (originally created by Partners for Mental Health)	Police	Prevention: Mental health stigma reduction & improved workplace mental health.	No evidence for effectiveness at reducing mental health symptoms was found.
Ontario Provincial Police (Wellness Unit)	Psychological health and well-being	Police	Prevention & Early Intervention: Wellness checks, post-critical incident checks, and a research baseline used to measure, establish and enhance psychological and wellness programs.	No evidence for effectiveness at reducing mental health symptoms was found.
Mood Disorders Society of Canada	Peer and Trauma Support Systems Training	First responder	Early Intervention: Provides organizations with training and implementation advice	No evidence for effectiveness at reducing

Organization	Program Name	Target Audience	Focus	Evidence of Effectiveness
		and veterans organizations	so they can implement a workplace peer support program to improve workplace mental health issues.	mental health symptoms was found.
Canadian Police Knowledge Network	Suicide Awareness and Prevention for Supervisors	Police	Suicide Prevention: Gatekeeper model.	No evidence for effectiveness at reducing suicidality was found in this context. See Chapter 2 for general review.
Canadian Police Knowledge Network	Suicide Awareness and Prevention	Police	Suicide Prevention: Gatekeeper model.	No evidence for effectiveness at reducing suicidality was found in this context. See Chapter 2 for general review.
Badge of Life Canada (Links users to a wide variety of mental health programming given by others)	Suicide Prevention Programming: Introductory course, ASIST, QPR, Canadian Association for Suicide Prevention, Centre for Suicide Prevention, In Harm's Way Police Suicide Prevention,	Police, Corrections	Suicide Prevention using a variety of training modalities.	No evidence for effectiveness at reducing suicidality was found in this context. See Chapter 2 for general review.
Badge of Life Canada	Mental Ill Health Prevention Programming: Tools for organizations to help	Police, Corrections	Mental Ill Health Prevention using a variety of information-based programs to	No evidence for effectiveness at reducing

Organization	Program Name	Target Audience	Focus	Evidence of Effectiveness
(Links users to a wide variety of mental health programming given by others)	them better understand workplace mental health issues and ways to reduce risk		train organizations on how they can reduce workplace mental health concerns.	mental health symptoms was found.
Badge of Life Canada (Links users to a wide variety of mental health programming given by others)	Peer Support Training Programming	Police, Corrections	Early Intervention: links users to a variety of training resources.	No evidence for effectiveness at reducing mental health symptoms was found. See Chapter 2 for general review.
BC First Responders Mental Health	Psychoeducational Material and Training	Firefighters, Dispatchers,	Early Intervention: Links users to a wide variety of mental health programming given by others; information sheets and some psychoeducational material.	No evidence for effectiveness at reducing mental health symptoms was found.

FINDINGS: AUSTRALIA

Many of the additional programs we identified in Australia were focused on veterans and their families. The Australian Department of Veterans Affairs have three programs, focused on mental ill health prevention (via psychoeducation) and suicide prevention. Soldier On also has three programs aimed at Veterans, with most of those being focused on increasing social connections within veteran's new communities and decreasing social isolation.

Three additional programs for first responders and their families (Healthy Workplaces for Police and Emergency Services, Behind the Scene, and CARE) offer a wide range of content and approaches, from web-based program information to short training sessions.

The evidence for these programs was not totally apparent. In some cases no information could be found for program effectiveness, in others there was a business case supporting the program but no quantifiable evidence, and in others there was an evaluation underway. In essence, the additional programing for Australia followed the trends that emerged in Chapters 2 and 3.

TABLE 4.2: ADDITIONAL AUSTRALIAN PROGRAMS IDENTIFIED THROUGH A WEB-BASED SEARCH

Organization	Program Name	Target Audience	Focus	Evidence of Effectiveness
HeadsUp/Beyond Blue/The Mentally Healthy Workplace Alliance	Healthy Workplaces for Police and Emergency Services (https://www.headsup.org.au/healthy-workplaces/for-police-and-emergency-services)	First Responders	Prevention: tools for workplaces to implement to reduce workplace stress.	Offered a business case, but no evidence for effectiveness at reducing mental health symptoms was found.
Department of Veterans Affairs	Psychoeducation: Information booklets	Veterans	Prevention	No evidence for effectiveness at reducing mental health symptoms was found.
Department of Veterans Affairs	High Res: a psychoeducational program teaching resilience: https://highres.dva.gov.au/highres/#!/home	Veterans	Prevention	No evidence for effectiveness at reducing mental health symptoms was found.
Department of Veterans Affairs	Operation Life: Psychoeducation website and app	Veterans and Families	Suicide Prevention	No evidence for effectiveness at reducing suicidality was found.
Behind the Scene	Behind the Scene Basic and Behind the Scene for Families	First Responders and Families	Prevention and Early Intervention: One hour presentations, plus one hour discussion; single session.	No evidence for effectiveness at reducing mental health symptoms was found.

Organization	Program Name	Target Audience	Focus	Evidence of Effectiveness
University of Sydney, University of New South Wales, Black Dog Institute (with funding by Movember)	HeadGear: Mental Fitness app	Broad	Prevention and Early Intervention	Website indicates two large trials were being completed but no information on whether the app was effective could be found.
Police Association of New South Wales	Career and Resilience Education Program (CARE)	Police and Families	Prevention	No evidence for effectiveness at reducing mental health symptoms was found.
Soldier On	Vet Connect	Veterans	Prevention: Increase social connection of veterans after leaving service.	No evidence for effectiveness at reducing mental health symptoms was found.
Soldier On	Facing Forward	Veterans	Prevention: focusing on transition from active service to veteran.	No evidence for effectiveness at reducing mental health symptoms was found.
Soldier On	Serving On	Veterans	Prevention: building resilience through developing a sense of volunteerism and community engagement.	No evidence for effectiveness at reducing mental health symptoms was found.

FINDINGS: NEW ZEALAND

Only two additional programs were found for New Zealand. One was for military personnel but was viewable by everyone. The second program was for a broad audience. Both use a psychoeducational approach to present information about mental ill health. No evidence for program effectiveness could be found.

TABLE 4.3: ADDITIONAL NEW ZEALAND PROGRAMS IDENTIFIED THROUGH A WEB-BASED SEARCH

Organization	Program Name	Target Audience	Focus	Evidence of Effectiveness
New Zealand Defence Force	Psychoeducation: Website with information on building resilience (http://health.nzdf.mil.nz/mind/building-mental-resilience/)	Military, viewable by everyone	Prevention	No evidence for effectiveness at reducing mental health symptoms was found.
New Zealand Government	Psychoeducation: Informational material entitled “A Mental Health Guide for New Zealand Leaders” (available as a PDF download)	Leaders, Broad	Prevention, Early Intervention	No evidence for effectiveness at reducing mental health symptoms was found.

FINDINGS: IRELAND

No additional programs were found for Ireland. We did, however, find a news article that may have implications for veterans. This news article, from 9 April 2019, discusses the long-term problems being faced by the Irish Defence Force when it comes to recruiting an in-house psychiatrist (https://www.thejournal.ie/defence-forces-psychiatrist-4576775-Apr2019/). Apparently they have been without an in-house clinician for the past 7 years and still cannot fill the post. The potential implications are that some military members may not be getting their mental health needs met in a timely manner and that this could have later implications for when they release (either a voluntary release or a medical release).

FINDINGS: UNITED KINGDOM

Several new programs were identified in the UK. Most of the additional programs were support-based, providing everything from crisis hotlines to financial and practical support. Several of them were delivered by charities. One organization was delivering a series of workplace interventions applicable to a broad range of occupations, including veterans and first responder organizations. Other organizations were delivering psychoeducation-based programs.

In terms of evidence, some sources suggested their programs were evidence-based or evidence-informed, but they offered no indication that the current iterations will work in veteran or first responder contexts. As I noted in Chapter 2, many of the programs evaluated there were said to be evidence-based or evidence-informed and their effectiveness was nil to low.

Not included in this list were several programs that focused on providing bereavement support for family members of veterans or first responders who had died. This is because bereavement is a natural grieving process rather than a mental health concern and I did not want to give the impression that it was problematic.

TABLE 4.4: ADDITIONAL UK PROGRAMS IDENTIFIED THROUGH A WEB-BASED SEARCH

Organization	Program Name	Target Audience	Focus	Evidence of Effectiveness
March on Stress	Sustaining Resilience at Work	Broad	Prevention	Says it is evidence-informed, but there is no evidence that it reduces poor mental health in organizations using it.
March on Stress	E-Health Psychological Monitoring Service	Broad	Prevention and Early Intervention: assesses employees working in high risk occupations twice a year for operational and organizational strain.	Says it is evidence-informed, but there is no evidence that it reduces poor mental health in organizations using it.
The Firefighters Charity	Psychoeducation	Firefighters	Prevention and Early Intervention: Informational website	No evidence of effectiveness at reducing symptoms and mental ill health was found.
Backup Buddy	Backup Buddy App	Police	Prevention and Early Intervention:	No evidence of effectiveness at

Organization	Program Name	Target Audience	Focus	Evidence of Effectiveness
			App-based psychoeducational material and crisis contact information. Available for several separate policing forces in the UK.	reducing symptoms and mental ill health was found.
Call 4 Backup Charity	Crisis Hotline	Police	Tertiary Prevention: Crisis hotlines are not necessarily prevention-focused, but aimed at getting people in crisis into some form of treatment. It is included here because they appear to do outreach and awareness work.	No evidence of effectiveness at reducing symptoms and mental ill health was found.
Police Care UK	Support Program	Police (current and former) and their families	Early Intervention: Offers emotional, financial, and practical support.	No evidence of effectiveness at reducing symptoms and mental ill health was found.
NHS Employers	Head First	Ambulance	Prevention and Early Intervention: a website-based set of psychoeducational materials.	No evidence of effectiveness at reducing symptoms and mental ill health was found.
Combat Stress	Support Program	Veterans and families	Early Intervention: Advice hotline	No evidence of effectiveness at

Organization	Program Name	Target Audience	Focus	Evidence of Effectiveness
				reducing symptoms and mental ill health was found.
Forces Line	Support Program	Veterans and families	Early Intervention: Advice hotline	No evidence of effectiveness at reducing symptoms and mental ill health was found.
Help for Heroes	Support Program	Veterans and families	Early Intervention: Advice hotline and psychoeducational courses	No evidence of effectiveness at reducing symptoms and mental ill health was found.
Big White Wall	Online Peer Support Program	Broad	Early Intervention: Online peer support with 24/7 clinician support.	No evidence of effectiveness at reducing symptoms and mental ill health was found.
PIPS Programmes, CIC	Half-day and Full-day Suicide Prevention Training for Policing Organizations	Police	Suicide Prevention	No evidence for effectiveness at reducing suicidality was found.
Police Federation of Northern Ireland	Bespoke Mental Resilience Training Program	Police	Prevention: No details of the program are given, just that it was developed by staff at the Police	No evidence of effectiveness at reducing symptoms and mental ill health was found.

Organization	Program Name	Target Audience	Focus	Evidence of Effectiveness
			Rehabilitation and Retraining Trust	
Beyond the Battlefield Charity	Social Support Program	Veterans	Early Intervention: Provides befriending service, among other more practical services (e.g., making sure veterans get all entitled benefits). Operates in both Northern Ireland and the Republic of Ireland.	No evidence of effectiveness at reducing symptoms and mental ill health was found.
Police Firearms Officers Association	Coaching and Social Support Programs	Families of Police Firearms Officers	Prevention via coaching services; Early Intervention via social support connection service.	No evidence of effectiveness at reducing symptoms and mental ill health was found.
AA Veterans Support Charity	Several Support Services	Veterans	Early Intervention: provides mental health first aid training to veterans, as well as support and respite services.	No evidence of effectiveness at reducing symptoms and mental ill health was found.

CHAPTER SUMMARY

This chapter sought to identify additional mental ill health prevention, early intervention, and suicide prevention programs available for veterans and first responders, as well as their families. We identified a series of search terms to maximize our success and used them to explore Google and three social media platforms (Facebook, LinkedIn, and Twitter). While reviewing the initial hits, it became apparent that many sites thought they were promoting programs, but they were not. To focus the findings on actual program, I developed a set of inclusion and exclusion criteria to help me identify which programs to include.

The findings from the search revealed nothing much that was new. There were additional government-based programs for veterans in Australia that were not identified during the SME portion of this scoping review. This was, in part, due to my difficulty finding an Australian SME in the veteran space to agree to participate.

But Australia was not the only country where we found additional programs for veterans. The internet search also revealed a number of new veterans programs in the UK, especially those run by charities.

Many of the sites we identified also contained resources and programs for families. Several of these programs were not designed specifically for families, but they were included as potential targets for the content.

As with the review in Chapters 2 and 3, finding programs with specific evidence that they reduce the mental health burden of participants was rare. Two programs in the UK stated they were based on up-to-date scientific research, but no evidence of effectiveness was provided. One program in Australia (HeadGear) indicated that there were two large-scale trials underway to determine effectiveness, but I could not find any evidence of those being currently available in the academic or grey scientific literatures.

An interesting finding that emerged here, as well as in Chapter 3's SME interviews, was that the majority of programs were found in the three countries with the largest populations. Why is it the case? Is it because with the greater population comes greater need? Is it a function of greater access to mental health prevention experts? This issue was especially concerning in the review of Ireland's mental health prevention needs in the first responder spaces. While the Dublin Fire Brigade's CISM team is highly regarded in the European Union, the SMEs and the literature review indicated that there were no mental ill health programs in place and that there was no intention to develop or implement any. This runs counter to what is happening in other countries, as well as what seems to be required from the mandatory EU standards for psychological safety in the workplace.

In summary, the literature search conducted in this chapter built on the findings from Chapters 2 and 3. While there were several new potential programs identified, some of which may have potential, there is currently a lack of evidence to support the notion that they improve the mental health of their target audience.

CHAPTER 5: CONCLUSIONS AND GENERAL RECOMMENDATIONS

CONCLUSIONS

This scoping review found that most veteran and first responder organizations are attempting to address the increased risks that members of these groups face when it comes to poor mental health and suicide. Many appear to be developing and/or implementing mental ill health prevention programs as a way of reducing the risk before members are exposed to traumatic or potentially traumatic events. Most first responder communities also appear to be using traditional early intervention programs, such as peer support and the CISM-suite of interventions. Some organizations are implementing separate suicide prevention programs, while many appear to be relying on their EAPs to do the heavy lifting there. When it comes to families of veterans and first responders, there seems to be very few prevention or early intervention programs out there. This may be the case, at least in part, because there is also not much information on the mental health burden being faced by families.

However, what became clear as a result of this review is that where these organizations falter most is in two areas: (1) they typically fail to evaluate the programs they implement; and (2) evidence suggests they might not be implementing programs as they were initially designed and tested, causing problems with the intervention's fidelity and validity.

Failing to evaluate their programs means that organizations do not have the information they need to know about whether the programs are doing what they are intended to do (i.e., reduce the mental health burden of veterans and first responders). When I challenge some organizations on this, their response is typically that they are using programs that are evidence-based or evidence-informed. As I noted in the Defining Terms and Concepts section of this report, these two terms mean very different things. Evidence-based is when a program is being implemented in exactly the same way it was initially validated (e.g., a suicide program developed for one police agency is implemented in a different group of police officers). Evidence-informed is when a program is being implemented differently than the way it was initially validated. This difference can be structural (e.g., not all elements of a larger program are being given; adapting elements from a therapeutic context to a prevention context) or it may be a different population (e.g., a mental health intervention program developed for police being given to firefighters or paramedics).

In some cases, people mix up the terms, thinking they are implementing something evidence-based when they are actually implementing something that is evidence-informed. But the biggest problem here is assuming that just because a program is evidence-informed means it does not need to be evaluated for validity or effectiveness. When programs are adapted to new contexts or the content is changed or altered in some way, it is no longer the same program; there is no way of knowing if it will work in the same way as it was initially developed and validated. The example I gave in Chapter 2 was the notion that many program developers have regarding psychoeducation and stress management techniques. They believe that, because these types of programs are successfully used in clinical contexts, they will work in the same ways, and with the same effect sizes, in prevention settings. As a result, many prevention programs that do this call their programs evidence-informed. Yet, it is apparent that these types of clinical approaches do not translate well to prevention contexts, in that programs relying heavily on these types of approaches tend to show relatively small effect sizes (if there any significant effects at all), most of which disappear after the first month or so. Yet program developers still develop programs based on these principles (as shown in Chapters 3 and 4).

Whether the main reason these programs fail to work well is a function of psychoeducation's inability to translate to prevention is an empirical question that needs a proper series of scientific evaluations.

Regarding the failure to implement programs as they were initially developed (e.g., mindfulness-based interventions, CISM-based programs), this speaks to organizations not understanding the importance of program fidelity and its relationship with program effectiveness. Programs that are developed and validated are often manualized. It is expected that people who implement those programs will implement the whole thing and follow the manual when training with it. But one thing program developers rarely do is conduct dismantling studies on their programs. Dismantling studies (also known as component studies) tell researchers and program designers what elements of a program are having the most effect on outcomes. For example, a recent systematic review and meta-analysis of dismantling studies examining which elements of depression treatments are most effective shows the importance of full vs. partial treatment, as well as the role that adding an emotional regulation element to cognitive behavioral therapy plays in increasing treatment effects (Cuijpers et al., 2019). Applying this notion to mental ill health prevention and early intervention programs (especially multi-component programs) means that, if programs are initially shown to be effective, it is typically not known what program elements are driving those effects. Dismantling studies are needed to tease that element out of the data. Thus, when organizations split these programs apart and only adopt certain elements, or change certain aspects of the programs, it is a coin toss as to whether they have chosen or altered elements that are actually being effective. This is one reason why additional evaluation is needed.

More specific suggestions for how I feel veterans and first responder organizations, as well as the governments that support them, can work to improve the mental health burden faced by the men and women working in these contexts, as well as their families, are outlined below. Some will be helpful when exploring all populations covered in this report; others will be specifically targeted to a single group. These recommendations should be transferable across all five countries that are targeted in this report.

GENERAL RECOMMENDATIONS

In order to better promote the development, implementation, and validation of programs designed to improve the psychological well-being, as well as reduce the suicide risk, of veterans, first responders, and their families, I have created a series of the general recommendations that I feel will be helpful. Given the breath of concerns that I have highlighted in this review these are not the only points that I feel should be addressed, just the ones I feel are most important at this juncture.

RECOMMENDATION 1: BETTER QUALITY MENTAL HEALTH SURVEILLANCE DATA

This is something that I have repeated throughout this review: we need better, higher quality mental health surveillance data for veterans, first responders, and their families. This is especially true of data that allows direct comparisons to the general population (so that differences in mental health burden can be compared between veterans and first responders, on the one hand, and the general population, on the others), as well as data that allows for comparisons within and across the veteran and first responder communities themselves. This latter point is especially important because it not only includes, for example, comparisons between police and firefighters or ambulance personnel, but it also allows for an examination of various demographic characteristics (e.g., male vs. female, years of service, number of trauma exposures, rural vs urban postings, paid service vs. volunteer, etc.).

Researchers, program developers, policy makers, organizational leaders, allied health professionals, etc., all currently rely on a variety of convenience sample data; at least, when they are available. That is, I could find

data exploring the mental health burden of first responders and veterans in Canada and Australia, with smaller studies examining veteran mental health in the UK. But I could find nothing for any of these groups in Ireland or New Zealand; and nothing for first responders in the UK. Right now, our reliance on convenience samples, or nothing at all, means that when smaller studies or surveys conducted by interested parties suggest a certain level of mental health risk, we cannot point to the gold standard data to indicate whether their poorer quality data are in line with the current estimates or not. This is important because these smaller studies often fuel social media outrage, rightly or wrongly.

I have mentioned a few times throughout this review that, because of social media, leaders in the veteran and first responder spaces often have to face outrage over the perceived lack of success at reducing the poor workplace mental health outcomes in these groups. In other words, they are unable to manage the expectations of those who want change to happen now. Having better data, and having that data updated on a regular basis, will help those leaders manage both the expectations of those working in the field, as well as those of the general public.

RECOMMENDATION 2: PRIORITIZE EVALUATION AND DEVELOP EVALUATION STANDARDS

Again, as I have indicated throughout this scoping review, most programs reviewed here should have been evaluated, and those evaluations should have been made public so that they can inform the public discussion around the evidence of mental ill health prevention and early intervention, as well as suicide prevention. However, this appears not to have been the case. As a result, we know very little about whether the programs that have been implemented by veterans and first responder groups actually do what they say they are supposed to do. Given what we know about the levels of effectiveness of these types of programs in the general workforce, combined with the studies conducted in veterans and first responders, I think we can be fairly confident that those programs probably don't work very well.

To address this issue, organizations need to prioritize evaluation and develop evaluation standards. These standards should not come from individual veteran or first responder organizations themselves, because this would mean that different groups would create different evaluation standards and standard operating procedures for developing and implementing them. This would make comparisons across programs and their evaluations difficult. The resources for doing evaluation, as well as creating, implementing, and overseeing the evaluation standards, should come from a neutral, third party organization that oversees these issues across all veteran and first responder organizations.

With regard to evaluation standards, I think there are several key elements to consider. These include:

- Prioritizing independent, third party evaluators (vs. internal staff). The reason this is important is that third party-evaluators tend to be less affected by internal politics and the need to make the organization look good. This is not always the case, as some SMEs reminded me. Still, they conduct the evaluation, prepare and present the findings, and their job is usually done. It is up to the organization to take negative findings with the same grace as positive findings.
- Publishing in peer-reviewed scientific literature so that the methods and interpretations can be vetted outside the organization. While this seems lofty, I feel it is important because peer-review can provide an important set of additional eyes on the research methods used to collect the data, the statistical methods used to analyse the data, and the interpretations of the findings. It adds an extra sense of value-added to the evaluation and the relevance of its findings.
- If evaluation results are not published in a peer-reviewed journal, then a detailed evaluation report should be publically available so that those conducting systematic reviews and meta-analyses can assess the methods and results for inclusion in their reviews. This is important because this allows

those doing systematic reviews and meta-analyses to review the findings, grade the quality of the research (as I have noted here several times, poorer quality study designs can often lead to inflated estimates of a program's effectiveness), as well as interpret the effect sizes and potential study design factors that may be influencing the outcome data.
    - Research methods should be described in sufficient detail that that reviewers can adequately assess the quality of the research design
    - Research results should be presented in a way that effect size statistics can be incorporated into meta-analyses
- Evaluations should focus the primary and secondary outcomes around issues of improvement in workplace mental health (e.g., symptoms or caseness), mental health (in the case of families), or suicide prevention (both workers and families). The use of a control or comparison group is often ideal because same-group, pre-post designs tend to produce inflated effect sizes. This speaks to the point that some programs are designed to improve a skill that, once improved, is thought to have a positive impact on workplace mental health (e.g., mindfulness-based interventions should improve mindfulness before improving psychological health; stress management programs should reduce stress levels before improving psychological health).

Bringing back the point I made in Recommendation 1 about expectation management, having data from rigorous, well-done evaluations of prevention and early intervention programs can help leaders manage expectations. This means talking about both program successes and program failures. This latter point is especially important because it can be used to help educate people about the current state of the science and how science is about iteration: adapting your approach so that you learn from both program failures as well as successes.

Whenever I bring this issue up, someone invariably says that it is not possible to do rigorous, high quality evaluation research in applied settings (e.g., within first responder organizations). I wholeheartedly disagree, mostly because I have seen evidence that it is possible. It just requires a higher level of organizational commitment. The goal here is to create an evaluation with the highest possible grade of evidence (see the Defining Terms and Concepts section at the beginning of this report for an overview of evidence grading) so that organizations can be sure that any effects they get are not an artefact of the evaluation method (e.g., pre-post studies tend to over-estimate effect sizes, suggesting a program is having a great impact than it really is). Whenever organizations say no to an evaluation approach that uses a high grade of evidence gathering (e.g., a group RCT), they are reducing the quality of the evidence base for the program they want to work and are spending lots of money (both direct and indirect costs) to implement. I encourage organizations to embrace rigorous evaluation as proof of their return on investment, as well as robust evidence that they are providing effective programs for their employees. This is not the area to cheap out on.

RECOMMENDATION 3: MOVE BEYOND THE FOCUS ON TRAUMATIC EVENTS

First responder organizations, especially, appear to focus on the impact of traumatic events on the health and well-being of their employees. Militaries do the same, and this has a potential impact on veteran mental health. However, as I have indicated at several points in this review, non-traumatic workplace stressors also cause poor mental health – even in first responders and military personnel. We have known this for decades. The importance of non-traumatic workplace stressors as causes of poor mental health can be found in the fact that they are enshrined in every country's standards or guidance document for managing psychological health and safety in the workplace. For first responder organizations to ignore the impact of these factors on the mental health of their operational staff, especially considering the known psychological costs of non-traumatic events, is troubling. Non-traumatic workplace stressors can often be changed to reduce the stress

levels on workers, taking away those sources of additional stress and giving them more psychological resources for dealing with trauma exposures they tend to see more regularly.

Thus, my recommendation here is that first responder organizations, especially, take this to heart and begin work on changing the non-traumatic organizational and operational elements that can be changed. This may be painful for some (e.g., those who are invested in the shiftwork model), but I feel the benefits to both the organizations and their employees will be worth it, and will likely save the organizations money in the long run (and I am hoping that the impact of these changes are examined by a proper evaluation of the organizational changes on employee health and well-being, as well as the economic benefits of making these changes).

RECOMMENDATION 4: MOVE BEYOND THE FOCUS ON PTSD

Discussions around veteran and first responder mental ill health tend to be focused on PTSD, but as the data show, they are at-risk for a wider variety of mental health conditions. Thus, all parties focusing on veteran and first responder mental ill health need to move beyond this limited focus and broaden the discussion. This could take several approaches. For example, mental health surveillance should not be focused solely on PTSD; prevention programs should address a wide range of mental ill health concerns; early intervention programs would mean that staff and support staff should be discussing more than just people's risk for PTSD; and policy makers need to broaden presumptive legislation so that all mental health conditions are covered under workplace compensation claim laws and workers are not financially penalized for taking mental health-related sick leave.

RECOMMENDATION 5: INSTITUTE SEPARATE SUICIDE PREVENTION PROGRAMS

Based on my discussions with several SMEs, it appears that many first responder organizations have given their EAPs the responsibility of handling their suicide prevention programs. It is not clear whether the EAPs involved run gatekeeper-type programs or whether they just assess all individuals who self-present with mental health concerns for suicidality. If the former, then there appears to be no data available to show program effectiveness. This is problematic because keeping program effectiveness data in-house means that nobody outside the EAP companies has access to it and can use those findings to do things like systematic reviews and meta-analyses. In other words, the data are not contributing to the advancement of the science of how to prevent suicide. And, as Milner and LaMontagne (2018b) noted, we have very little evidence of the effectiveness of workplace suicide prevention programs; we don't know what works, what doesn't, and how we can improve. These types of data, if they exist, could be a huge help.

The latter scenario is also problematic because it assumes that everyone who needs mental health assistance is coming forward, when we know this is not the case. The current estimates are that, depending on the environment, only about half of those with a mental health concern actually seek treatment. In organizations that are predominantly male, we can expect that number to be less. However, there is a second potential concern with this, and that is that it assumes that all suicides are a function of poor mental health. As I outlined in Chapter 2, there is increasing debate around this belief. The argument is that the association is not as strong as people believe it to be and that there are flaws with the current ways we make those assessments.

Given these two concerns about having EAPs run organizational suicide prevention programs, this recommendation is that veteran and first responder organizations conduct separate suicide prevention initiatives and establish a monitoring strategy that will allow them to collect data of program effectiveness over time. There are some programs that appear to be effective, though we need much more data before conclusive statements can be made.

RECOMMENDATION 6: BETTER TARGETED PROGRAMS FOR VETERANS

Programs to prevent or reduce the mental health burden among veterans are relatively rare, but when they can be found they tend to fall into two categories: (1) psychoeducational material about mental health symptoms, stigma, and treatment options; and (2) programs aimed at facilitating the transition from military to civilian life. Given the questions raised throughout this report on the utility of psychoeducation in a prevention context, programs aimed at helping veterans in the transition process seem the most ideal way forward.

However, not all veterans need this type of intervention. The review from Chapter 2 suggests that those with the most difficulty transitioning to civilian life are: (1) those whose identities are more strongly aligned with military culture (i.e., they have few connections to the civilian world); (2) those who release mid-career (vs. early or late career); (c) those with a medical discharge and ongoing physical health concerns; and (d) those who have deployed to a conflict zone (and not necessarily in a combat role). A potential fifth group may be those who experienced poor mental health and suicidality while in military service, but are now asymptomatic.

Thus, my recommendation is that programs should be targeted towards those in these groups. However, the questions remain: what would ease the transition of these people? What would cause less anxiety, depression, and other poor mental health symptoms? Do we need to go beyond the transition stage for some of these groups? To address these questions, a series of needs analyses and additional research should be conducted in these groups. This is because we know relatively little about the transitionary period and beyond. It may very well be that each of the four groups listed earlier have different requirements.

RECOMMENDATION 7: FAMILIES NEED MORE THAN JUST EAP ACCESS

Most the programs aimed at families were ones that veterans or first responders also had access to. Most of them were focused on presenting psychoeducational material (e.g., website information, apps) and providing EAP access. However, we know so little about the mental health prevention, early intervention, and suicide prevention needs of families. SMEs mentioned that families dealing with veterans or first responders who are experiencing mental health or suicide concerns feel isolated from their communities and their friends. This is similar to what has emerged in the literature examining stress and health among long-term caregivers.

Therefore, my recommendation here is that we need a series of exploratory initiatives to examine the mental health burden of families, including the various psychosocial and demographic factors that are associated with poor psychological well-being. Following that, we need a series of needs assessments to uncover the best ways to help families, and whether those helping strategies differ as a function of family member (e.g., spouses, children, parents). Importantly, we need to use as wide a definition of family as possible, not just the heteronormative definition of a father, mother, and children. Finally, we need to implement programming stemming from all that previous research.

RECOMMENDATION 8: THE NEED FOR A GENDERED LENS IN ALL PREVENTION AND EARLY INTERVENTION PROGRAMMING

The final general recommendation I would like to make concerns the need for applying a gendered lens to all programs being implemented in this space. We know enough about men's health to understand the limitations of various types of program implementation methods (e.g., programs that require participants to self-identify, register, and generally come to it). Therefore, we need to know more about how to apply prevention and early intervention programs in veterans and first responders in a way will speak to men and engage them in their own mental health management. This is true even for the ambulance/paramedic/EMT

environment, which has become gender balanced. The reason for this is because, even to this day, the culture is still very masculine-influenced. However, we also need to be aware of the masculine nature of military and first responder cultures, what one SME called the stoic service culture, and how that can influence the development and implementation of mental ill health prevention programs. For example, to what extent does the masculine, stoic service culture a factor in what appears to be a lack of any intention to develop mental ill health prevention programs in Ireland?

As such, the recommendation here is to incorporate a men's health lens to program development and implementation. However, because the area of men's health is so new, there will be a lot of trial and error while we search for strategies that are effective across a wide range of men and male dominated occupations. This will take time but, because the reward means better mental health and saved lives, it is much needed.

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APPENDIX: LIST OF SUBJECT MATTER EXPERTS BY COUNTRY

Name	E-mail	Area of Expertise; Focus
Canada		
Dr. Heidi Cramm (Queen's University)	heidi.cramm@queensu.ca	Family Support; Mental Ill Health Prevention, Suicide Prevention
Dr. Elizabeth Donnelly (University of Windsor)	donnelly@uwindsor.ca	EMS/Paramedics; Prevention
Dr. Deniz Fikretoglu (Department of National Defence)	Deniz.Fikretoglu@drdc-rddc.gc.ca	Military, Veteran's; Prevention
Louis-Francis Fortin[9] (Service de Police de la Ville de Montréal)	Louis-Francis.Fortin@spvm.qc.ca	Police; Prevention, Early Intervention, Suicide Prevention
Gaynor Jackson (Former CEO, Military Family Resource Centre, Esquimalt, BC)	gaynorjackson63@gmail.com	Military, Veterans, and Families; Early Intervention, Suicide Prevention
Dr. Renee MacPhee (Wilfrid Laurier University)	rmacphee@wlu.ca	EMS/Paramedics; Prevention
Dr. David Pedlar (Canadian Institute of Military & Veteran Health Research)	david.pedlar@queensu.ca	Veterans; Suicide Prevention
Steve Schnitzer (Police Academy, Justice Institute of BC)	sschnitzer@jibc.ca	Police; Prevention/Early Intervention
Dr. Duncan Shields (Clinical Psychologist)	Duncan.Shields@ubc.ca.ca	Veterans, Firefighters/Prevention & Early Intervention

[9] Special thanks to Andreanne Angehrn who conducted this interview in French and translated it into English for me.

Australia		
Prof. Paula Brough (Griffiths University)	p.brough@griffith.edu.au	First Responders/Prevention & Early Intervention
Prof. Tony LaMontagne (Deakin University)	Tony.Lamontagne@deakin.edu.au	First Responders; Prevention
Dr. Angela Martin (University of Tasmania)	angela.martin@utas.edu.au	First Responders; Prevention
Belinda Neil (Fearless)	belinda.neil@fearless.org.au	First Responders; Prevention & Early Intervention
Dr. Kathryn Page (Deakin University)	kathryn.page@me.com	First Responders; Workplace Mental Health
Irina Tchernitskaia (Country Fire Authority)	i.tchernitskaia@cfa.vic.gov.au	Firefighters; Prevention & Early Intervention
Assoc. Prof. Tony Walker (Ambulance Victoria)	tony.walker@ambulance.vic.gov.au	Ambulance; Prevention, Early Intervention, Suicide Prevention, Families
Victoria Police, Health, Safety, & Wellbeing Division	na	Police; Prevention, Early Intervention
New Zealand		
Alison Barnes (Fire and Emergency Service NZ)	alison.barnes@fireandemergency.nz	Firefighters; Mental Ill Health Prevention & Early Intervention
Dr. David McBride (University of Otago)	david.mcbride@otago.ac.nz	Firefighters, Veterans; Mental Ill Health Prevention & Early Intervention
Barry Taylor	barry@taylormadetrainingconsulting.com	First Responders, Veterans; Suicide Prevention, Mental Ill Health Prevention
Ireland		
Mark Reddy	mark.reddy1@gmail.com	Police Mental Ill Health Prevention & Early Intervention

Brian Gilbert	briangilbert9@gmail.com	Firefighters & Ambulance/Paramedics; Early Intervention
United Kingdom		
Dr. Fiona Bell (Yorkshire Ambulance Service)	fiona.bell7@nhs.net	Ambulance; Mental Ill Health Prevention & Suicide Prevention
Prof. Neil Greenberg (King's College, London)	neil.greenberg@kcl.ac.uk	Military, Veteran, Police; Mental Ill health Prevention & Early Intervention
Dr. Ian Hesketh (College of Policing/National Police Wellbeing Service)	Ian.Hesketh@college.police.uk	Police; Mental Ill health Prevention & Early Prevention

ABOUT THE AUTHOR

Dr. Donald McCreary is an Adjunct Professor of Psychology at Brock University (St. Catharines, Canada) and owner of Donald McCreary Scientific Consulting (British Columbia, Canada). His consulting and research interests are focused in three general areas: (1) the associations between occupational stress, health, well-being, and resilience (occupational health psychology), especially among those working in high stress jobs; (2) understanding the many ways that people and society influence men's health and well-being, especially in male-dominated workplace cultures; and (3) human research ethics. Don has worked in academia, as well as for both provincial and federal government research departments, including the Canadian Department of National Defence, where his main focus was on workplace stress and well-being in military and first responders. In 2004, Don was awarded Fellowship in the American Psychological Association for his career contributions to the psychological sciences. He is also a recipient of the Queen Elizabeth II Diamond Jubilee Medal for his research and efforts promoting psychological well-being among members of the Canadian Armed Forces and public safety personnel. Don can be reached via email at McCrearyScientific@gmail.com.