Implementation of a First Responder Operational Stress Injury Clinic Using the TDF-II and CFIR Frameworks: A paramedic perspective

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Abstract

Background: First responders (firefighters, paramedics, and police officers) are often exposed to potentially psychologically traumatic events. When combined with insufficient social support and reduced help-seeking behaviours, such exposures may increase the risk of mental health challenges, particularly among paramedics who report the highest rates of mental disorders.

Objective: The current study used the Theoretical Domains Framework (TDF) and the Consolidated Framework for Implementation Research (CFIR) to identify critical barriers and facilitators to help-seeking and accessing mental health care, and the feasibility and sustainability of a first responder clinic.

Methods: Semi-structured qualitative interviews included 11 paramedics (frontline, mid-and-senior management, and union), recruited using purposive and snowball sampling. Interviews were analyzed using content and thematic analyses. The TDF and CFIR guided study design, interview content, data collection, and analysis.

Results: Barriers included the complexities of stigma, confidentiality, cultural competency, and trust.

Conclusions: The findings will be instrumental in developing evidence-based approaches to mental health care for paramedics.

Résumé

Contexte: Les premiers répondants (pompiers, personnels paramédicaux et policiers) sont souvent exposés à des événements potentiellement psychologiquement traumatisants. Ces expositions à des événements potentiellement psychologiquement traumatisants peuvent augmenter le risque de problèmes de santé mentale lorsque combinées à un manque de soutien social à une sous-utilisation des ressources de soutien disponibles. Les personnels paramédicaux qui signalent les taux les plus élevés de troubles mentaux sont particulièrement à risque.

Objectif: La présente étude emploie le Theoretical Domains Framework (TDF) « cadre des domaines théoriques » et le Consolidated Framework for Implementation Research (CFIR) « cadre consolidé pour la recherche sur la mise en oeuvre. » La présente étude a pour but d'éclaircir différents facteurs pouvant encourager ou dissuader les comportements de recherche d'aide et d'accès aux soins de santé mentale. L'étude a également pour but de préciser la faisabilité et la durabilité d'un centre médical pour les premiers répondants.

Méthodes: Les entretiens qualitatifs semi-directifs ont inclus 11 personnels paramédicaux (première ligne, cadres moyens et supérieurs et syndicat), recrutés à l'aide d'un échantillonnage raisonné et boule de neige. Les entretiens ont été analysés à l'aide d'analyses de contenu et thématique. Le TDF et le CFIR ont guidé la conception de l'étude, le contenu des entretiens, la collecte de données et l'analyse.

Résultats: Les thèmes comprenaient les complexités de la stigmatisation, de la confidentialité, de la compétence culturelle et de la confiance.

Conclusions: Les résultats contribueront à l'élaboration d'approches fondées sur des données probantes en matière de soins de santé mentale pour les personnels paramédicaux.

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Table of Contents

List of Tables

List of Appendices

List of Abbreviations

BCWs	Behaviour Change Wheel
CCRP	Clinically Certified Research Professional
CFIR	Consolidated Framework for Implementation Research
COREQ	Consolidated Criteria for Reporting Qualitative Research
CSSP	Canadian Safety and Security Program
CUPE	Canadian Union of Public Employees
DRDC	Defence Research and Development Canada
EAP	Employee Assistance Program
EMT	Emergency Medical Technician
FRMHNC	First Responder Mental Health Network Collaboration
GBA+	Gender-based Analysis Plus
ICH GCP	International Conference on Harmonisation Guideline for Good Clinical Practice
OHSN-REB	Ottawa Health Science Network Research Ethics Board
OPS	Ottawa Paramedic Service
OSI	Operational Stress Injury
PCL-5	Posttraumatic Stress Disorder Checklist
PDP	Professional Development Program
PPTE	Potentially Psychologically Traumatic Events
PSP	Public Safety Personnel
PTSD	Post-Traumatic Stress Disorder
REB	Research Ethics Board

R2MR	Road to Mental Readiness
SD	Standard Deviation
SIU	Special Investigations Unit
TCPS 2	Tri-Council Policy Statement
TDF	Theoretical Domains Framework
TOH	The Ottawa Hospital
VUCA	Volatile, Uncertain, Complex, and Ambiguous
WSIB	Workplace Safety and Insurance Board

Chapter 1: Thesis Structure and Brief Summary of Each Chapter

This document is structured as an article-based graduate thesis. This type of thesis includes a minimum of one academic article prepared by the student (the University of Ottawa and Graduate and Postdoctoral Studies, 2020). Per these requirements, this thesis begins with an introductory chapter, followed by a methods chapter, a research article prepared for submission to an academic peer-reviewed implementation science journal, and a chapter on the results of the Consolidated Framework for Implementation Research (CFIR). This thesis concludes with the final chapter offering a discussion that synthesizes and analyzes the major themes, placing them in a broader context, and provides concluding thoughts.

In Chapter 2, an overview of the prevalence of mental health disorders, suicidal thoughts, behaviours, and attempts within the paramedic population by comparison to the broader first responder and public safety population are provided, in addition to an examination of the current barriers and facilitators to help-seeking behaviour identified in the literature. This is followed by a discussion of the theoretical frameworks supporting the study and ends with a discussion of the rationale for the study, its aims, and research questions.

Chapter 3 explores the study area by providing a description of the qualitative approaches used to collect data, as well as a detailed account of the analytic approaches used.

Chapter 4 includes the academic article, "Applying the Theoretical Domains Framework to identify police, fire, and paramedic preferences for accessing mental health care in a First Responder Operational Stress Injury Clinic: A qualitative study." The manuscript will be submitted for publication in March 2021. This article explores the Theoretical Domains Framework's (TDF) application to identify and better understand critical barriers and facilitators

to help-seeking and accessing mental health care in three first responder services in Ottawa, Canada. The results are presented in the format required for submission to *Implementation Science*.

Chapter 5 includes a summary of the results from the CFIR interviews and analysis. This section explores the barriers and enablers to the implementation and long-term sustainability of a First Responder Operational Stress Injury Clinic in Ottawa, Canada, from the perspectives of paramedics in mid-level and senior management positions at the Ottawa Paramedic Service and the union. These results will be submitted to an academic peer-reviewed journal at a later date.

This thesis concludes with Chapter 6, which contains: 1) a summary of the article's findings and a discussion of the CFIR results, which synthesizes their content and relates them to the broader first responder, public safety, and military mental health contexts in Canada and internationally. 2) A critique of the TDF and CFIR frameworks, including a discussion of the associated advantages of using the CFIR + TDF approach to elucidate organizational readiness and behaviour change. 3) A reflection of my positionality and reflexivity about the research. 4) A discussion of the significance and implications of the findings, including a series of recommendations for organizations who seek to replicate the research, leading to a discussion of the next steps. This chapter concludes with closing thoughts and suggestions for future research. The bibliography and appendices follow this chapter.

Chapter 2: Background

2.1. First Responder Mental Health

First responder vocations (i.e., career and volunteer firefighters, paramedics, police officers, and communications officers) involve repeated, often chronic, exposure to trauma and critical stress (Carleton et al., 2019; Hartley et al., 2011; Kilpatrick et al., 2013; Komarovskaya et al., 2011; Perrin et al., 2014). Routine exposure to these dangerous, often life-threatening, and potentially psychologically traumatic events (PPTE) (CIPSRT, 2019), places first responders at an increased risk of developing poor mental health outcomes, including post-traumatic stress disorder (PTSD) (Benedek et al., 2007; Carleton et al., 2019; Kleim & Westphal, 2011; Kraemer et al., 2016). First responders also exhibit significantly greater rates of major depressive disorder, generalized anxiety disorder, alcohol use disorder (Carleton, Afifi, Turner, Taillieu, Duranceau, et al., 2018; Di Nota et al., 2020), and suicidal thoughts, plans, and behaviours (Carleton, Afifi, Turner, Taillieu, LeBouthillier, et al., 2018; Di Nota et al., 2020; National Volunteer Fire Council, 2012; Nock et al., 2008; Stanley et al., 2015, 2016) than the general Canadian population (Carleton, Afifi, Turner, Taillieu, Duranceau, et al., 2018; Statistics Canada, 2012a, 2012b). Whether the cause of these other mental disorders are as a direct result of their employment or could be attributed to other causes, such as background, organizational culture, or lack of acceptable treatment options (Jayasinghe et al., 2005), remains unknown.

2.1.1. Prevalence of Mental Health Disorders Among Public Safety Personnel in Canada

Lifetime prevalence rates of PTSD within the general Canadian population are 9.2%, and 2.4% reported past-year prevalence (Van Ameringen, Mancini, Patterson, & Boyle, 2008). Comparatively, lifetime prevalence rate estimates of PTSD among police officers range anywhere from 8% (Marchard et al., 2010) to 32% (Asmundson & Stapleton, 2008). Lifetime prevalence

estimates of PTSD among firefighters are 17% (Cornell et al., 1999), and 26% among paramedics (Regehr et al., 2002). Among a large self-selected sample of Canadian Public Safety Personnel (PSP), 23.2% appear to screen positive based on self-report responses on the Posttraumatic Stress Disorder Checklist (PCL-5) for current PTSD (Carleton, Afifi, Turner, Taillieu, Duranceau, et al., 2018). The definition of PSP refers in part to border services officers, public safety communications officials (e.g., 911 operators, dispatchers), correctional workers, firefighters (career and volunteer), Indigenous emergency managers, operational and intelligence personnel, paramedics, police (municipal, provincial, and federal), and search and rescue personnel (CIPSRT, 2019; Public Health Agency of Canada, 2020). This elevated risk is not limited to Canada. Based on a systematic review and meta-analysis, estimated global rates of PTSD prevalence among rescue workers (which includes first responders) across Europe, North America, Asia, Oceania, South America, and Africa are 10% (Berger et al., 2012). This study also noted higher prevalence rates of PTSD in paramedics by comparison to police officers, firefighters, and other rescue teams (Berger et al., 2012), which is in line with past literature which also highlights greater prevalence rates and reported symptoms of PTSD amongst paramedics (Carleton, Afifi, Turner, Taillieu, Duranceau, et al., 2018; Clohessy & Ehlers, 1999).

Recent Canadian research, which was the first study conducted on a national scale assessing the mental health of first responders and other PSP in Canada, revealed that approximately 44.5% of participants screened positive for one or more mental health disorders (PTSD, major depressive disorder, generalized anxiety disorder, social anxiety disorder, panic disorder, and alcohol use disorder) (Carleton, Afifi, Turner, Taillieu, Duranceau, et al., 2018). This rate was based on self-reported mental health symptoms and is significantly greater than the epidemiological rate of 10.1% for diagnoses of any mental health disorder in the general Canadian

population (Statistics Canada, 2012a). Across all PSP sectors, primary positive screenings included PTSD (23.2%) and major depressive disorder (26.4%) (Carleton, Afifi, Turner, Taillieu, Duranceau, et al., 2018), and contained significant evidence of comorbidity of chronic pain (Carleton et al., 2017; Carleton, Afifi, Taillieu, et al., 2018), and mental health disorder symptoms (Carleton, Afifi, Taillieu, et al., 2018).

While these results should certainly be contextualized by emphasizing that they were derived from a self-selected sample of approximately 20% of the total PSP in Canada, of which there are more than 325,000 currently serving members, this research, however, is the only existing national-level data on the mental health of PSP. Therefore, this is the most current and only existing source of baseline data on PSP mental health. Further research conducted using the same online survey and psychiatric scales of approximately 13% (n=1,032) of correctional service employees (i.e., provincial staff in institutional wellness such as nurses, program officers, superintendents, correctional officers, administrative staff, and parole officers) in Ontario, Canada, published in 2020, reported similar rates of mental health disorders among this PSP sector (Carleton, Ricciardelli, et al., 2020). In particular, the findings noted similar prevalence rates of PTSD and major depressive disorder (Carleton, Ricciardelli, et al., 2020). The results of this study support the national findings across PSP sectors, supporting the reliability of Carleton et al's, 2018 study. Recently published pan-Canadian research on nurses, before the COVID-19 pandemic, using Carleton et al's, 2018, online survey and the same psychiatric scales also reported similar rates to those found in PSP (Carleton, Afifi, Turner, Taillieu, Duranceau, et al., 2018; Stelnicki et al., 2020a, 2020b). A total of approximately 2% (n=7,358) of Canadian regulated nurses (i.e., registered nurses, licensed practical nurses, registered practical nurses, registered psychiatric nurses, and nurse practitioners) participated in the study, with 43.6% of the sample having

completed the survey (Canadian Institute for Health Information, 2020; Stelnicki et al., 2020a, 2020b). The findings noted that 23% screened positive for current symptoms consistent with PTSD. Rates of PTSD were similar to those found in PSP (Carleton, Afifi, Turner, Taillieu, Duranceau, et al., 2018; Carleton, Ricciardelli, et al., 2020).

2.1.2. Prevalence of Mental Health Disorders Among First Responders

Irrespective of cultural differences, first responders around the globe appear to experience similar rates of mental disorders (Alexander & Klein, 2001; Bennett et al., 2004; Berger et al., 2012; Fjeldheim et al., 2014; Hartley et al., 2011; Harvey et al., 2016; Katsavouni & Bebetsos, 2016; Kilpatrick et al., 2013; Stanley et al., 2016). Not only are they at risk for the development of PTSD as a result of exposure to critical operational stress incidents (Carleton et al., 2019; Hartley et al., 2011; Kilpatrick et al., 2013; Komarovskaya et al., 2011; Perrin et al., 2014), but first responders are also at risk of elevated rates of depression (Carleton, Afifi, Turner, Taillieu, Duranceau, et al., 2018; Hartley et al., 2011), anxiety (Bennett et al., 2004), alcohol abuse, and alcohol dependence (Bennett et al., 2004; Carleton, Afifi, Turner, Taillieu, Duranceau, et al., 2018; Fjeldheim et al., 2014; Petrakis et al., 2002). Overall, paramedics exhibit the highest rates of PTSD, displaying significantly greater rates than both firefighters and police officers, the latter of which reported the lowest rates amongst first responders (Asmundson & Stapleton, 2008; Berger et al., 2012; Carleton, Afifi, Turner, Taillieu, Duranceau, et al., 2018; Cornell et al., 1999).

The question of whether the incidence of mental health disorders are rising within this population is a key consideration to which there is no currently available answer. Given this gap, the Government of Canada highlighted the need for a national surveillance system to begin tracking the incidence of PTSD in PSP, and the associated economic and social costs in the Federal Framework for PTSD Act (An Act Respecting a Federal Framework on Post-Traumatic Stress

Disorder, 2018), which became law in June 2018, and the Federal Framework for PTSD (Public Health Agency of Canada, 2020). The need for continued monitoring and tracking of new and existing data sources will be vital in addressing the impact on this population, and paramedics in particular.

2.1.3. Prevalence of Suicidal Thoughts, Behaviours, and Attempts

The prevalence of suicidal ideations and frequency of reports of suicides in first responders has catalyzed current research in this population. A recent systematic review, including 63 quantitative studies, investigated the prevalence of suicidal thoughts, behaviours, and deaths in first responder populations (Stanley et al., 2016). The findings not only indicated that both suicidal thoughts and behaviours were highly prevalent but highlighted a significantly elevated risk of suicide among first responders. Of the 63 studies in the systematic review, 34 were empirical studies that measured deaths by suicide, with rates varying from 11.7 to 32.9/100,000 per year. The authors included studies from several countries, but only two of which contained Canadian data. Both studies focused solely on deaths by suicide of police officers. The systematic review further emphasized the need to address the scarcity of research investigating first responders in the Canadian context and, most importantly, the inclusion of paramedics in Canadian and international research (Stanley et al., 2016).

A recent national assessment of suicidal ideations, plans, and attempts among Canadian PSP reported high proportions of past-year and lifetime prevalence rates of suicidal ideation (10.1% and 27.8%, respectively), suicidal plans (4.1% and 13.3%), and suicide attempts (0.3% and 4.6%) by comparison to the general Canadian population (Carleton, Afifi, Turner, Taillieu, LeBouthillier, et al., 2018). Paramedics, in particular, were found to have higher rates of suicidal behaviours, including past year prevalence and lifetime rates, of suicidal thoughts (15.4% and

41.1%), plans (7.1% and 23.8%), and attempts (0.9% and 9.8%) than other PSP sectors, irrespective of gender (Carleton, Afifi, Turner, Taillieu, LeBouthillier, et al., 2018). By comparison to the growing body of literature on mental health and suicide amongst firefighters and police officers, there is also a lack of studies investigating suicide rates in paramedics and Emergency Medical Technicians (EMTs) (Stanley et al., 2016).

2.2. Help-Seeking Behaviour

A crucial element of any successful suicide prevention strategy is to connect high-risk populations with access to appropriate mental health services (Andrade et al., 2014). A large proportion of studies have investigated service utilization and barriers to care inhibiting individuals with mental disorders from accessing care (Andrade et al., 2014; Haugen, McCrillis, Smid, & Nijdam, 2017). However, further research examining patterns of service use of first responders and broader PSP population is required (Andrade et al., 2014; Haugen, McCrillis, Smid, & Nijdam, 2017). Wilson et al., (2016) highlighted this knowledge gap and argued that there is a paucity of research investigating treatment utilization and barriers to mental health care for first responders and PSP in Canada (Carleton, Afifi, et al., 2020; Krakauer et al., 2020; Ricciardelli et al., 2020; Wilson et al., 2016).

A study evaluating predictors of treatment utilization of first responders, in the aftermath of September 11, 2001, who responded during or after the terrorist attacks on the World Trade Centre (Jayasinghe et al., 2005) found that of those who expressed a willingness to accept referrals for psychotherapy (n=174), only 42.5% attended a minimum of one session, and 57.5% did not access the available services (Jayasinghe et al., 2005). A recent study assessing the mental health literacy and help-seeking behaviours of Australian police officers indicated that they were more likely to seek out care outside of the police services as a result of fear of a breach of confidentiality,

potential impact on career progression, and stigma from colleagues (Reavley et al., 2018). Conversely, in a study of mental health service use amongst US firefighters with a history of suicidal ideation, plans, or attempts, respondents reported higher rates of treatment utilization (77%) relative to adults in the general American population (<50%) with a history of suicidal ideation, plans, or attempts (Hom, Stanley, Ringer, & Joiner, 2016).

2.2.1. Barriers to Care and Help-Seeking

A significant proportion of individuals who require mental health care may not participate, delay, or ultimately elect not to seek care (Clement et al., 2015; Coleman et al., 2017; Corrigan, 2004; Corrigan et al., 2014; Haugen et al., 2017; Held & Owens, 2013; Iversen et al., 2011; Krakauer et al., 2020; Sickel et al., 2019). Lack of perceived need for care and attitudinal barriers were the most prevalent barriers to accessing mental health care within a World Health Organization study of the general population across 24 countries, including Canada (Andrade et al., 2014). Among attitudinal barriers, stigma-related barriers were common (Andrade et al., 2014; Corrigan, 2004; Corrigan et al., 2014; Haugen et al., 2017; Hom, Stanley, Ringer, Joiner, et al., 2016; Reavley et al., 2018). Findings from a recent systematic review on barriers to care within first responders reported stigma-related barriers, particularly fears about confidentiality and potential employment-related discrimination, were most prevalent (Haugen et al., 2017). Fear of judgement from colleagues and leaders for seeking mental health care was also noted as a considerable barrier to accessing care. When studies included in the review were classified by study type, no significant differences on stigma or barriers to care were found between occupational type (i.e., police and other first responders). Other barriers to care included scheduling issues and a lack of awareness of where to access mental health care (Haugen et al., 2017).

A recent online mental health prevalence survey conducted by Ricciardelli et al., 2020 provides further insight into barriers to care and care-seeking behaviour among Canadian PSP (Ricciardelli et al., 2020). The results described the process by which PSP decided to seek mental health care, how their colleagues subsequently viewed them, and how this may have limited their knowledge and understanding of their personal mental health needs (Ricciardelli et al., 2020). Most notably, the findings reported stigma-related help-seeking concerns, for example, fear of how their colleagues would view them, as a substantial barrier to care. The results also indicated that lack of awareness of available services and perceived need for care might limit PSPs knowledge and understanding of their personal mental health care needs (Ricciardelli et al., 2020). A systematic review by Clement et al., (2015) within the general population on the impact of health-related stigma identified stigmatization as having a moderate negative effect on help-seeking behaviour by comparison to other types of barriers and that concerns regarding disclosures were the most frequently cited barrier to care (Clement et al., 2015). Stigmatization was also reported as a recurrent barrier to care-seeking behaviour in a systematic review by Haugen et al., (2017). The study examined help-seeking barriers and mental health stigma within first responders (Haugen, McCrillis, Smid, & Nijdam, 2017). These findings are in line with past literature assessing help-seeking and mental health service use, which reports stigma as a recurrent barrier impeding help-seeking behaviour (Corrigan et al., 2014; Haugen et al., 2017; Hom, Stanley, Ringer, Joiner, et al., 2016; Reavley et al., 2018). As noted in other research areas pertaining to first responders, past literature has predominantly focused on police officers, limiting the proportion of available information on paramedic mental health (Andrade et al., 2014). As such, this highlights the importance of the inclusion of paramedics in future research.

2.2.2. Stigma

Mental health-related stigma is a broad and complex concept comprised of three social-cognitive processes: 1) stereotypes about people with mental health conditions exhibited, for example, through negative beliefs, biases, or overgeneralizations applied to characterize an individual or all individuals with mental illness; 2) prejudice is the emotional manifestation of attitudes endorsing negative stereotypes; and 3) discrimination is the behaviour that is displayed through negative actions targeting an individual or group, resulting from stereotypes and prejudice (Corrigan, 2004; Corrigan et al., 2014; Haugen et al., 2017; Sheehan et al., 2017; Sickel et al., 2019). Within stigma, eight sub-types have been identified in the literature (i.e., public stigma, self-stigma, label avoidance, structural stigma, courtesy stigma, stigma power, automatic stigma, and double stigma or multiple stigma) (Sheehan et al., 2017). The following three are most relevant to paramedics and other first responders: 1) *public stigma* includes the public validation of prejudice and discrimination directed toward a particular minority group; 2) *self-stigma* includes the internalization within an individual and subsequent application of public stereotypes and/or prejudices to their own life; and 3) *label avoidance* consists of the process by which a person with mental illness avoids engaging in behaviours or activities that would disclose their diagnosis (e.g., seeking mental health care) (Haugen et al., 2017; Sheehan et al., 2017).

2.2.3. Addressing Barriers to Care and Help-Seeking

The provision of additional training, education, and supports to facilitate making paramedics and other first responders more aware of the associated psychological, behavioural, and physical effects of stress and trauma is beneficial towards increasing awareness and help-seeking behaviour and decreasing the prevalence of stigma (Clement et al., 2015; Ricciardelli et al., 2020). Strategies to address reducing barriers to care and increasing help-seeking behaviour

can be adapted from Canadian and international military literature (Stirling et al., 2019; Zinzow et al., 2012), which suggests the inclusion of several strategic approaches. Actions include working to mitigate or reduce structural barriers, stigma, and negative attitudes regarding the effectiveness of mental health care (Dickstein et al., 2010; Fikretoglu et al., 2017; Hom et al., 2017; Zamorski et al., 2016; Zinzow et al., 2012).

Given the high prevalence rates of mental health disorders, suicidal thoughts, behaviours, and attempts, and barriers to mental health care among paramedics, further research was necessary to investigate approaches to enhancing mental health services. No previous studies have used implementation science frameworks to inform the development and implementation of mental health-related services for paramedics or the broader first responder population. Therefore, the following study includes the application of implementation science to determine how best to provide accessible and acceptable mental health care to paramedics using two frameworks. The Theoretical Domains Framework (TDF) was used to identify barriers and facilitators to help-seeking behaviour and access to mental health care among frontline paramedics to inform the development and implementation of a First Responder Operational Stress Injury Clinic. The Consolidated Framework for Implementation Research (CFIR) was used to assess the barriers and facilitators of the clinic's implementation and long-term sustainability from paramedics' perspectives in mid-level and senior leadership positions and at the union.

2.3. Theoretical Frameworks

Developing a clear understanding to address why an intervention was successful in one setting versus unsuccessful in another is a central tenet within the field of implementation science (Birken, Powell, Shea, et al., 2017; Michie & Prestwich, 2010; Nilsen, 2015). The use of a theoretical framework to guide study development and design, data collection, analysis, and

interpretation of study findings is essential in enabling researchers to identify and address barriers and facilitators critical to the success of an intervention's implementation. With the omission of a theoretical framework to guide this process, researchers limit the generalizability of factors that influenced the intervention's implementation (Francis et al., 2012; ICEBeRG, 2006; Kirk et al., 2016; Michie & Prestwich, 2010). Help-seeking and accessing mental health care are health-related behaviours. In order to inform the development of innovative interventions for the provision of mental health care, such as the First Responder Operational Stress Injury Clinic in this study, there is an essential need to identify which factors are associated with help-seeking and accessing care and understand how they can be modified to elicit behaviour change (Michie, West, et al., 2014).

2.3.1. Theoretical Domains Framework (TDF)

Emerging out of the need for an evidence-based theory of behavioural change, the TDF is a synthesis of 128 theoretical constructs from 33 theories of behaviour and behaviour change to facilitate implementation (Atkins et al., 2017; Cane et al., 2012; Michie et al., 2005). The framework was developed through expert consensus in collaboration with psychological theorists, health services researchers, and health psychologists to understand behaviour change (Michie et al., 2005; Phillips et al., 2015). The TDF was created to help simplify large amounts of data and overlapping theoretical constructs and provides researchers with a more accessible, understandable, and user-friendly theoretical lens to examine the cognitive, social, and environmental impacts on behaviour (Atkins et al., 2017).

The TDF is a rigorous framework that incorporates theory-based strategies to target specific behaviour while also accounting for the complexity of the setting in which an intervention is implemented. The framework was originally developed to better understand influences of

healthcare provider behaviour to inform implementation research and has since been adopted in a host of health-related settings to facilitate behaviour change (e.g., smoking cessation, asthma management, weight management, pre-operative testing, rehabilitation post-stroke, hand hygiene, Human Papillomavirus vaccination, medication adherence, cardiovascular disease and diabetes prevention, pain management; Atkins et al., 2017; French et al., 2012; Garbutt et al., 2018; Heslehurst et al., 2014; Lynch, Luker, Cadilhac, Fryer, & Hillier, 2017; McAteer, Stone, Fuller, & Michie, 2014; Phillips et al., 2015; Presseau et al., 2017; Shaw, Holland, Pattison, & Cooke, 2016; Yamada et al., 2018) and understand multiple stakeholders' perspectives (i.e., health professionals, patients, and the public) (Presseau et al., 2017). Implementing behaviour change is a challenging undertaking as it requires cooperation and change at both the individual and organizational levels. Therefore, the TDF may be more applicable in specific contexts, especially when behavioural change is at the core of the solution (Atkins et al., 2017).

The initial version of the TDF contained 12 theoretical domains used to target specific aspects of behaviour for intervention strategies: *Knowledge*; *Skills*; *Social/Professional Role and Identity*; *Beliefs About Capabilities*; *Beliefs About Consequences*; *Motivation and Goals*; *Memory, Attention and Decision Processes*; *Environmental Context and Resources*; *Social Influences*; *Emotional Regulation*; *Behavioural Regulation*; and *Nature of Behaviour* (Atkins et al., 2017; Michie et al., 2005). Amended and validated in 2012 to include a broader set of potential barriers and facilitators, the changes to the theoretical framework included the addition of two new domains, *Reinforcement* and *Optimism*, and the separation of *Motivation and Goals* into the *Intentions* and *Goals* domains (Cane et al., 2012). The current version of the TDF now includes 14 theoretical domains and 84 constructs: *Knowledge*; *Skills*; *Social/Professional Role and Identity*; *Beliefs About Capabilities*; *Optimism*; *Beliefs About Consequences*; *Reinforcement*;

Intentions; *Goals*; *Memory, Attention and Decision Processes*; *Environmental Context and Resources*; *Social Influences*; *Emotion*; and *Behavioural Regulation* (Cane et al., 2012), as illustrated in Table 1. The abovementioned theoretical domains provide a clear and comprehensive consolidation of influences of behaviour, rooted in techniques of behavioural change and behavioural theories (Atkins et al., 2017; Cane et al., 2012).

Table 1. Theoretical Domains and Constructs of the TDF

TDF (Version 1) (Michie et al., 2005)		**TDF (Version 2)** (Atkins et al., 2017; Cane et al., 2012)	
Domains	**Constructs**	**Domains and Descriptions**	**Constructs**
1. Knowledge	- Knowledge - Knowledge about condition/scientific rationale - Schemas + mindsets + illness representations - Procedural knowledge	**1. Knowledge** *(An awareness of the existence of something)*	- Knowledge (including knowledge of condition/scientific rational) - Procedural knowledge - Knowledge of task environment
2. Skills	- Skills - Competence/ability/skill assessment - Practice/skills development - Interpersonal skills - Coping strategies	**2. Skills** *(An ability or proficiency acquired through practice)*	- Skills - Skill development - Competence - Ability - Interpersonal skills - Practice - Skill assessment
3. Social/Professional Role and Identity	- Identity - Professional identity/boundaries/role - Group/social identity - Social/group norms - Alienation/organisational commitment	**3. Social/Professional Role and Identity** *(A coherent set of behaviours and displayed personal qualities of an individual in a social or work setting)*	- Professional identity - Professional role - Social identity - Identity - Professional boundaries - Professional confidence - Group identity - Leadership - Organisational commitment
4. Beliefs About Capabilities	- Self-efficacy - Control – of behaviour and material and social environment - Perceived competence - Self-confidence/professional confidence - Empowerment - Self-esteem - Perceived behavioural control - Optimism/pessimism	**4. Beliefs About Capabilities** *(Acceptance of the truth, reality, or validity about an ability, talent, or facility that a person can put to constructive use)*	- Self-confidence - Perceived competence - Self-efficacy - Perceived behavioural control - Beliefs - Self-esteem - Empowerment - Professional confidence
5. Beliefs About Consequences	- Outcome expectancies - Anticipated regret - Appraisal/evaluation/review - Consequents - Attitudes - Contingencies - Reinforcement/punishment/consequences - Incentives/rewards - Beliefs - Unrealistic optimism	**5. Optimism** *(The confidence that things will happen for the best or that desired goals will be attained)*	- Optimism - Pessimism - Unrealistic optimism - Identity

	- Salient events/sensitisation/critical incidents - Characteristics of outcome expectancies- physical, social, emotional - Sanctions/rewards, proximal/distal, valued/not valued, probable/improbable, salient/not salient, perceived risk/threat		
6. Motivation and Goals	- Intention; stability of intention/certainty of intention - Goals (autonomous, controlled) - Goal target/setting - Goal priority - Intrinsic motivation - Commitment - Distal and proximal goals - Transtheoretical model and stages of change	**6. Beliefs About Consequences** *(Acceptance of the truth, reality, or validity about outcomes of a behaviour in a given situation)*	- Beliefs - Outcome expectancies - Characteristics of outcome expectancies - Anticipated regret - Consequents
7. Memory, Attention and Decision Processes	- Memory - Attention - Attention control - Decision making	**7. Reinforcement** *(Increasing the probability of a response by arranging a dependent relationship, or contingency, between the response and a given stimulus)*	- Rewards (proximal/distal, valued/not valued, probable/improbable) - Incentives - Punishment - Consequents - Reinforcement - Contingencies - Sanctions
8. Environmental Context and Resources	- Resources/material resources (availability and management) - Environmental stressors - Person x environment interaction - Knowledge of task environment	**8. Intentions** *(A conscious decision to perform a behaviour or a resolve to act in a certain way)*	- Stability of intentions - Stages of change model - Transtheoretical model and stages of change
9. Social Influences	- Social support - Social/group norms - Organisational development - Leadership - Team working - Group conformity - Organisational climate/culture - Social pressure - Power/hierarchy - Professional boundaries/roles - Management commitment - Supervision - Inter-group conflict - Champions - Social comparisons - Identity; group/social identity - Organisational commitment/alienation - Feedback - Conflict – competing demands, conflicting roles - Change management - Crew resource management - Negotiation - Social support: personal/professional/ organisational, intra/interpersonal, society /community - Social/group norms: subjective, descriptive, injunctive norms - Learning and modelling	**9. Goals** *(Mental representations of outcomes or end states that an individual wants to achieve)*	- Goals (distal/proximal) - Goal priority - Goal/target setting - Goals (autonomous/controlled) - Action planning - Implementation intervention

10. Emotion	- Affect - Stress - Anticipated regret - Fear - Burn-out - Cognitive overload/tiredness - Threat - Positive/negative affect - Anxiety/depression	**10. Memory, Attention and Decision Processes** *(The ability to retain information, focus selectively on aspects of the environment and choose between two or more alternatives)*	- Memory - Attention - Attention control - Decision making - Cognitive overload/tiredness
11. Behavioural Regulation	- Goal/target setting - Implementation intention - Action planning - Self-monitoring - Goal priority - Generating alternatives - Feedback - Moderators of intentions-behaviour gap - Project management - Barriers and facilitators	**11. Environmental Context and Resources** *(Any circumstance of a person's situation or environment that discourages or encourages the development of skills and abilities, independence, social competence, and adaptive behaviour)*	- Environmental stressors - Resources/material resources - Organisational culture/climate - Salient events/critical incidents - Person x environment interaction - Barriers and facilitators
12. Nature of the Behaviours	- Routine/automatic/habit - Breaking habit - Direct experience/past behaviour - Representation of tasks - Stages of change model	**12. Social Influences** *(Those interpersonal processes that can cause individuals to change their thoughts, feelings, or behaviours)*	- Social pressure - Social norms - Group conformity - Social comparisons - Group norms - Social support - Power - Intergroup conflict - Alienation - Group identity - Modelling
		13. Emotion *(A complex reaction pattern, involving experiential, behavioural, and physiological elements, by which the individual attempts to deal with a personally significant matter or event)*	- Fear - Anxiety - Affect - Stress - Depression - Positive/negative affect - Burn-out
		14. Behavioural Regulation *(Anything aimed at managing or changing objectively observed measures or actions)*	- Self-monitoring - Breaking habit - Action planning

Note. The definitions provided in Table 1 include the exact wording from Cane et al., (2012).

Given that certain theoretical domains, such as the *Environmental Context and Resources*, *Social/Professional Role and Identity*, and *Social Influences* also suggest that key behavioural

changes do not only occur at the individual level but rather at the organizational level, the TDF takes organizational factors into consideration as well (French et al., 2012). As such, the framework can also be applied at the organizational level (French et al., 2012). The TDF can be applied in both qualitative and quantitative research contexts (Cane et al., 2012) and can be used either prospectively to inform the implementation of an intervention or retrospectively to aid in understanding the challenges associated with an intervention's implementation (Phillips et al., 2015). However, the framework has been most prominently applied within qualitative research contexts to facilitate in providing a framework to guide the development of interview topic guides, and data collection and analysis (Atkins et al., 2017). The TDF can also be applied in conjunction with the Behaviour Change Wheel (BCW) to augment the analysis to further identify behaviour change techniques. While the TDF is equipped to detect fundamental barriers and facilitators to behaviour change, the BCW can help to address intervention strategies (Atkins et al., 2017; Horppu et al., 2018; Michie et al., 2011; Michie, Atkins, et al., 2014).

2.3.2. Consolidated Framework for Implementation Research (CFIR)

Developed using an amalgamation of previously published theories, the CFIR is a 'meta-theoretical' framework that has been widely adopted to guide the implementation of evidence-based interventions (Damschroder et al., 2009; Kirk et al., 2016; Stokes et al., 2018). The CFIR provides a comprehensive and standardized list of constructs that when applied either prospectively or retrospectively, enable researchers to identify variables that are most applicable to the intervention being studied (Damschroder et al., 2009; Stokes et al., 2018). First introduced in 2009, the framework has most commonly been applied retrospectively to understand how implementation was undertaken (Keith et al., 2017); however, the CFIR can be applied both prospectively and/or during the implementation of an intervention (Damschroder et al., 2009;

Damschroder & Lowery, 2013). The CFIR can also be applied to understand the perspectives of multiple stakeholders (Ilott et al., 2013). In Damschroder et al.'s seminal publication, the authors advised researchers to avail themselves to using the framework prospectively prior to the implementation of an intervention in order to identify potential barriers and facilitators that may arise ahead of the launch and large-scale implementation, thereby allowing for modifications of the "adaptable periphery" (i.e., components, structures, and systems related to the intervention that can be modified) while leaving the "core components" of the intervention intact to increase the probability that the intervention will be successfully disseminated and implemented (Damschroder et al., 2009). Like the TDF, the CFIR can guide the study design, data collection, and analysis; in addition, the framework can also help shape data collection tools (i.e., interview guide) to facilitate the interpretation and reporting of results (Kirk et al., 2016).

The CFIR includes 39 implementation-related constructs classified within five theoretical domains, which include: *Characteristics of the Intervention* (i.e., the core and adaptable periphery of the intervention), *Outer Setting* (i.e., economic, social, political context external to an organization), *Inner Setting* (i.e., internal organizational structure, political, and culture climate), *Characteristics of Individuals* (i.e., characteristics of individuals involved with the implementation process), and *Process* (i.e., active change process) (Damschroder et al., 2009; Ilott et al., 2013) to positively or negatively influence the implementation of interventions (Robins et al., 2013; Stokes et al., 2018), as illustrated in Table 2. The interaction between the framework's domains influences the success of the implementation of an intervention (Kirk et al., 2016).

Table 2. Theoretical Domains and Constructs of the CFIR

Domains	Constructs	Domains	Constructs
1. **Intervention Characteristics**	• Intervention source • Evidence strength and quality • Relative advantage • Adaptability • Trialability • Complexity • Design quality and packaging • Cost	**4. Characteristics of Individuals**	• Knowledge and beliefs about the intervention • Self-efficacy • Individual stage of change • Other personal attributes
2. **Outer Setting**	• Patient needs and resources • Cosmopolitanism • Peer pressure • External policy and incentives	**5. Process**	• Planning • Engaging • Executing • Reflecting and evaluation
3. **Inner Setting**	• Structural characteristics • Networks and communication • Culture • Implementation culture • Readiness for implementation		

A significant advantage of the framework is that it includes well-defined definitions and common language based on existing theories to help guide the evaluation of interventions and disseminate the determinants of implementation (Damschroder et al., 2009; Ilott et al., 2013; Kirk et al., 2016). The framework also provides a broad, standardized list of theoretical constructs to help researchers identify barriers and facilitators that are most relevant to the implementation of an intervention (Damschroder & Hagedorn, 2011; Kirk et al., 2016). These variables can be assessed within each of the CFIR's domains, with the opportunity for some overlap (Kirk et al., 2016). The unit of analysis can be applied at the individual and/or organizational levels, with the latter being the most common application (Kirk et al., 2016; Means et al., 2020). The CFIR's constructs can also serve as the foundation for developing testable hypothetical models centred around specific constructs and their interrelationships (Kirk et al., 2016). Much like the TDF, the CFIR can be applied to both qualitative and quantitative research contexts (Damschroder & Lowery, 2013; Kirk et al., 2016). While the CFIR provides ample benefits to help facilitate the implementation process of an intervention from an organizational level, it is recommended that if the unit of analysis is at the individual level (i.e., the *Characteristics of Individuals*), that

researchers should augment the CFIR with the TDF to elucidate the theoretical underpinnings of behaviour (CFIR Research Team Centre for Clinical Management Research, 2020). It is important to note that the CFIR does not explain the nature of behaviours identified during the research process. Consequently, it cannot be utilized to elucidate behaviours, but rather, it informs and guides intervention methods.

2.3.3. CFIR + TDF Approach

A recent systematic review by Birken et al., (2017) investigated researchers' rationale for using a combined approach integrating two theoretical frameworks to comprehensively address multiple components of an intervention and its implementation. In particular, the authors focused on the combined use of the CFIR and TDF frameworks (i.e., CFIR + TDF approach) to provide guidance and to caution researchers to use this approach judiciously and only if necessary. Inappropriate use of this approach can result in needlessly complicating the research process and rendering findings redundant (Birken, Powell, Presseau, et al., 2017). The study identified that a significant contributor of researchers' rationale for adopting a CFIR + TDF approach included that the CFIR provides an effective framework to evaluate barriers and facilitators at an organizational level, while the TDF offers an effective framework to gain a robust understanding of the barriers and facilitators at the individual level of members within the organization where the intervention is being implemented. Adoption of this approach then includes applying the findings to inform the design of tailored evidence-based strategies and/or interventions. The use of the CFIR and TDF in this way supports the rationale that tailoring interventions to the context within which they will be applied increases the probability of successful implementation (Baker et al., 2015; Birken, Powell, Presseau, et al., 2017; Powell et al., 2015; Wensing et al., 2009). The authors acknowledged that the appropriate rationale for the combined use of these frameworks enables a more robust multi-

level assessment of behaviour change within healthcare-related organizations (Birken, Powell, Presseau, et al., 2017).

2.4. Gaps and Issues in the Literature

Public safety and first responder mental health research is increasing; nevertheless, several areas warrant additional attention. The main opportunities involve: 1) shifting to using standard validated measures and outcomes amongst researchers (Carleton, Afifi, Turner, Taillieu, Duranceau, et al., 2018; Stanley et al., 2016); 2) garnering larger sample sizes away from self-selected populations; and, 3) expanding the focus from PTSD to include the broader array of mental health disorders among paramedics and other PSP. There is also a need to identify, develop, and evaluate best practice guidelines backed by research on assessments and interventions, in addition to exploring how best to administer them. Furthermore, most literature on first responder mental health excludes paramedics and EMTs despite evidence that such professionals may be particularly at-risk (Asmundson & Stapleton, 2008; Berger et al., 2012; Carleton, Afifi, Turner, Taillieu, Duranceau, et al., 2018; Carleton, Afifi, Turner, Taillieu, LeBouthillier, et al., 2018; Clohessy & Ehlers, 1999; Cornell et al., 1999; Stanley et al., 2015, 2016). Most importantly, there is a need to integrate the use of implementation science frameworks to facilitate the development and implementation of evidence-based mental health-related services tailored to paramedics' needs and preferences. The available evidence strongly suggests that there are high prevalence rates of mental disorders among this population and a need to treat the mental injuries sustained through employment. Assessing paramedic preferences for acceptable access to mental health care should increase help-seeking behaviour and intervention effectiveness (MHCC & PSHSA, 2015).

2.5. Rationale

Given that preferences for access to care are likely influenced by both organizational and individual determinants, the use of both the TDF and CFIR frameworks to maximize the effectiveness of the design and implementation of the intervention is critical. These findings will facilitate in developing an understanding of the barriers and facilitators that influence paramedic help-seeking behaviour and access to mental health care. The most typical routes through which the general population accesses mental health care (e.g., through emergency departments) are often regarded as workplaces for paramedics in which they are known in their professional capacity, which may facilitate stigma-driven barriers to accessing mental health care. Further, treatment and employer resources for first responder services even within the City of Ottawa are highly variable. To effectively implement mental health services specific to this highly underserved and at-risk population in an acceptable, accessible, and feasible fashion, paramedics, related organizations, and stakeholders need to be included throughout the continuum of research.

The current study was also informed by a cross-sectional survey conducted in collaboration with the Ottawa Paramedic Service and the University of Ottawa to provide a baseline assessment of the service's membership's mental health. A total of 512 paramedics, communications, and logistics members completed the survey, with a response rate of 84.5%. The key conclusion from the survey, which will be submitted for publication, was a high prevalence of mental disorders, with depression being more common than PTSD. The paramedic mental health snapshot summary highlighted the high variability of treatment and employer resources for all first responders. The results underscored the need to further explore the barriers and facilitators to help-seeking behaviours among paramedics and access to care. The results also identified prevalent barriers for paramedic help-seeking, including perceptions that care is not needed, and effective care is

unavailable. Addressing barriers to care and assessing acceptability is essential for implementation, supported by evidence that a health intervention is more likely to be implemented if it is acceptable (Baker et al., 2015; Birken, Powell, Presseau, et al., 2017; Powell et al., 2015; Timmons et al., 2015; Wensing et al., 2009). The inclusion of the TDF and CFIR frameworks were vital in shaping the study design, development of the semi-structured qualitative interviews alongside domains within the existing first responder mental health literature, data collection and analysis, and the interpretation and reporting of results (Francis et al., 2012; ICEBeRG, 2006; Kirk et al., 2016; Michie & Prestwich, 2010). The present study also investigates the importance of assessing paramedic preferences for care as a fundamental component for ensuring credibility and acceptance of an intervention.

This study is part of a larger parent project funded by Defence Research and Development Canada, in partnership with Public Safety Canada, along with in-kind support from the City of Ottawa. The parent project includes an assessment of barriers and facilitators to help-seeking and accessing mental health care among paramedics, police officers, and firefighters to inform the development and implementation of a First Responder Operational Stress Injury Clinic. The Investigative Committee for the parent study includes the following content experts: Dr. Simon Hatcher (Principal Investigator); Valerie Testa (co-Principal Investigator); and co-Investigators Drs. R. Nicholas Carleton, Ian Colman, Daniel Corsi, Deniz Fikretoglu, Alexandra Heber, Marnin Heisel, Kednapa Thavorn, and Commander Shannon Leduc.

2.6. Research Objectives, Overall Aims, and Research Questions

2.6.1. Research Objectives

The purpose of this study is to explore barriers and facilitators impacting paramedic help-seeking behaviour and access to mental health care to inform the development, implementation,

and long-term sustainability of a First Responder Operational Stress Injury Clinic (henceforth referred to as the "clinic") using the TDF and CFIR frameworks. The aim of this study also includes the prospective application of the CFIR and TDF as determinant frameworks to clarify barriers and facilitators that must be addressed if the clinic is to be successfully implemented in Ottawa, Canada (English, 2013; Kirk et al., 2016; Nilsen, 2015; Robins et al., 2013; Warner et al., 2018).

2.6.2. Overall Aims

The overall aims of the present study were to address:

1) Paramedic preferences to address their mental health;
2) Internal and external barriers and facilitators of help-seeking and access to care;
3) How information regarding the clinic should be disseminated; and
4) Barriers impeding implementation and sustainability.

Language was taken into consideration in order to address organizational culture and stigma surrounding mental health care. Language discussing the clinic is important for the sustainability and maintenance of the model.

2.6.3. Research Questions

This study addresses the following research questions:

1) What are paramedic treatment preferences for accessing and seeking mental health care in a First Responder Operational Stress Injury Clinic?
2) What factors impact paramedic help-seeking and access to mental health care?
3) What factors impact the acceptability of a First Responder Operational Stress Injury Clinic?

4) What factors impact the feasibility of implementing a First Responder Operational Stress Injury Clinic?
5) What factors impact the long-term sustainability of a First Responder Operational Stress Injury Clinic?

Chapter 3: Methods

3.1. Study Design

The present study is a descriptive qualitative study which used semi-structured one-on-one face-to-face qualitative interviews based on two implementation science frameworks, the Theoretical Domains Framework and the Consolidated Framework for Implementation Research. Interviews were conducted with paramedics from the Ottawa Paramedic Service, located in Ottawa, Canada. The study was designed to utilize the TDF and CFIR prospectively to clarify critical barriers and facilitators to implementing a First Responder Operational Stress Injury Clinic (Damschroder & Hagedorn, 2011; English, 2013; Robins et al., 2013; VanDevanter et al., 2017). The TDF was used to identify barriers and facilitators to help-seeking behaviour and accessing mental health care from the perspectives of frontline paramedics. The CFIR was used to determine what factors impact the clinic's feasibility and long-term sustainability from the perspectives of mid and senior management paramedics, and the union. Given that treatment and access to care preferences are likely influenced by organizational, group, and individual determinants, these determinant frameworks were selected to inform data collection and analysis, and facilitate in guiding implementation planning (Atkins et al., 2017; Birken, Powell, Presseau, et al., 2017; Birken, Powell, Shea, et al., 2017; Kirk et al., 2016; Nilsen, 2015; Warner et al., 2018). The TDF and CFIR were used to better understand the perspectives of multiple stakeholders (Birken, Powell, Presseau, et al., 2017). The study design followed the recommendations for conducting TDF (Atkins et al., 2017) and CFIR-based qualitative research (CFIR Research Team Centre for Clinical Management Research, 2020; Damschroder et al., 2009).

Semi-structured qualitative interviews were selected as opposed to online survey data collection or focus groups due to three factors:

1) The original design of the parent study included conducting a survey-based needs assessment; however, it was not well received by the first responder community and was therefore changed to semi-structured qualitative interviews;
2) The opportunity to adapt the approach to the current design provided the benefit of the richness of individual face-to-face interviews; and
3) It was the best fit conceptually.

First responder stakeholders also provided several recommendations for the study, which further supported the use of individual face-to-face interviews as paramedics would be more comfortable, and therefore more forthcoming in an individual setting rather than in focus groups or via the completion of an online survey.

3.2. Study Setting

The outer setting for this study included the broader municipal government (i.e., the City of Ottawa), the Government of Ontario, and the Government of Canada. The CFIR's inner setting domain included the Ottawa Paramedic Service. The service receives 50% of its funding through the Government of Ontario and the remaining 50% from the City of Ottawa's municipal budget.

3.3. Interview Topic Guides

3.3.1. TDF Interview Topic Guide

This writer designed an interview topic guide to identify key factors that may influence whether paramedics would seek mental health care in a First Responder Operational Stress Injury Clinic. The present study utilized the interview guide developed for the parent study, as described in the manuscript in Chapter 4. The guide was based on the 14 domains of the TDF (Atkins et al., 2017; Cane et al., 2012), which was modified to examine the perspectives of paramedics classified

into one of the three TDF sub-groups: 1) those who had previously sought treatment for a mental health disorder(s); 2) Peer Support Group members; or 3) frontline paramedics. This interview topic guide targeted frontline paramedics. Members who self-identified as meeting the criteria for more than one sub-group were categorized in the following order: 1) previously sought treatment for mental health disorder(s) (this included members who had not sought treatment ahead of reaching point of crisis prior to seeking care); 2) peer support member; and 3) frontline member. The TDF Interview Topic Guide is accessible in Appendix A.

3.3.2. CFIR Interview Topic Guide

The initial version of the interview topic guide was developed for the parent study based on sample interview questions available on www.cfirguide.org and was informed by the CFIR's 39 constructs and five domains (Damschroder et al., 2009). Thereafter, the interview topic guide was further refined by a literature review and discussions amongst the research team to tailor the guide to solicit specific information about the clinic (English, 2013; Warner et al., 2018). Dr. Hatcher (SH) and this writer (VT) had significant professional experience with the paramedic population and were well equipped to refine areas of the interview guide. Following the recommendations of Damschroder et al., (2009), CFIR constructs to assess were pre-identified based on their relevancy to the study (Damschroder et al., 2009; Warner et al., 2018). Had the CFIR constructs not been utilized as a "checklist" of variables on the www.cfirguide.org website, to consider during the development of the interview topic guide, certain factors would either have been missed and/or irrelevant questions would likely have been asked (Kirk et al., 2016). The present study utilized the interview guide developed for the parent study, and this writer was involved in the creation of the interview guide. The same interview topic guide was used for all participants and included all five of the CFIR's domains:

1) *Intervention Characteristics* - of the First Responder Operational Stress Injury Clinic;
2) *Outer Setting* – municipal, provincial, and federal government (i.e., the City of Ottawa, Government of Ontario, and Government of Canada);
3) *Inner Setting* - the Ottawa Paramedic Service;
4) *Characteristics of Individuals* – individuals working in mid-level (Superintendent rank) and senior command positions (Commander, Deputy Chief, and Chief ranks) with the Ottawa Paramedic Service, Canadian Union of Public Employees (CUPE 503) representatives, and Workplace Safety and Insurance Board (WSIB) representatives; and
5) *Process* – targeting aspects of developing, delivering, and evaluating the clinic.

As the CFIR was applied prospectively, certain constructs were less prominent (i.e., within the *Characteristics of Individuals*, and *Process* domains); nonetheless, the decision to probe all domains and constructs in the interviews were pertinent in order to inform the development and implementation of the clinic. The interview topic guide was used in all semi-structured CFIR qualitative interviews. Participants were provided with the opportunity to skip any questions they felt that they could not contribute to. The CFIR Interview Topic Guide is available in Appendix B.

3.4. Data Collection

3.4.1. Participants

This present descriptive qualitative study was one part of a larger parent study. The protocol for the parent study is described as part of the manuscript outlined in Chapter 4. Participants included paramedics in frontline (n=5), mid-level (n=2), and senior command positions (n=3) from the Ottawa Paramedic Service in Ottawa, Canada, and CUPE 503 (the paramedic union, n=1). Despite this writer's best efforts to recruit a representative from the

Workplace Safety and Insurance Board, no participants could be recruited. The current study did not include any civilian members employed within the service. Potential study participants were recruited directly from the Ottawa Paramedic Service. The following sub-groups were engaged in participating in the TDF and CFIR interviews and included individuals who:

TDF interviews:

1. Had previously sought treatment for a mental health disorder (one or more) during their time as a paramedic; and
2. Were Peer Support Group members.

CFIR interviews:

1. Were in mid-level (i.e., Superintendents) or senior management (i.e., Commanders, Deputy Chiefs, and/or the Chief) positions;
2. Were members in senior positions with the union; and
3. Were a case worker or manager from the WSIB – *no members recruited.*

All participants engaging in the TDF interviews were frontline paramedics. Additionally, five of the six participants in the CFIR interviews were formerly in frontline paramedic positions within the Ottawa Paramedic Service. They were, therefore, able to draw on personal experiences during the CFIR interviews. Lastly, while the final individual is not part of the abovementioned sub-groups, this writer met with the General Manager of Emergency and Protective Services for the City of Ottawa to discuss the intended clinic to obtain buy-in and to support long-term sustainability post completion of the research funding.

3.4.2. Sample Size

Following the recommendations by Francis et al., (2010) and Guest et al., (2006), the initial stopping criterion for data saturation had, prior to commencing recruitment, been defined as ten

interviews with an additional three interviews with no new emerging themes after the third interview (Francis et al., 2010; Guest et al., 2006). The minimum recruitment target included: paramedics who had previously sought treatment for mental health disorder(s) (at least one participant); Peer Support Group members (at least two participants); mid-level and senior management (at least two participants); senior member of the union (at least one participant); and, a WSIB case worker or manager (at least one participant) (Francis et al., 2010; Guest et al., 2006). The intent was to conduct concurrent data analysis and coding alongside data collection as an iterative process until data saturation was reached. However, due to delays with transcription, analysis and coding for both the TDF and CFIR interviews occurred after the completion of data collection.

3.4.3. Recruitment

The recruitment process for the TDF and CFIR interviews occurred in tandem. For the TDF interviews, two paramedics who were known to the research team were recruited to participate in the study. Thereafter, a snowball sampling technique was used to identify potential participants. Paramedics recruited via purposive sampling were carefully identified to reflect the three TDF sub-groups to capture a broad range of beliefs regarding accessing mental health care. Following the practices of snowball sampling, participants identified through purposive sampling were requested to provide suggestions of potential individuals within the five sub-groups for both the TDF and CFIR interviews (as detailed in Section 3.4.1 - Participants). These individuals self-referred to the study. For the CFIR interviews, mid-level management paramedics were also recruited through snowball sampling, beginning with individuals who were suggested by participants during the TDF interviews. This writer contacted senior management and union representatives by email directly. Potential participants for both the TDF and CFIR interviews

were provided with information about the study and the interview process via email or telephone ahead of scheduling the consenting and qualitative interview appointment.

Snowball sampling allows for access to participants who may be difficult to reach and allows for a less costly recruitment strategy compared to other methods (Cohen & Arieli, 2011); however, snowball sampling may skew results by limiting participation to persons well known to the initial participants. To mitigate sampling limitations, including solely recruiting frontline, mid-level, and senior management paramedics who were supportive of the implementation of the clinic and were more willing to discuss mental health and help-seeking, participants were also asked to suggest names of individuals who disagreed with the implementation of the clinic and/or held conflicting beliefs regarding the clinic. The proportion of men to women in paramedic and broader first responder sectors differ based on occupation type and level of seniority. At the time that the present study was designed, approximately 30% of the Ottawa Paramedic Service's workforce, in frontline roles, were women. There were no women in senior leadership roles at the time that the interviews were conducted. To limit potential for bias or coercion, this writer excused herself from any participant interviews with whom she had a pre-existing professional relationship. In exchange, this writer completed eight additional interviews with frontline and mid-level and senior management with police officers and firefighters for the parent study.

Participant recruitment and dissemination of study-related information were facilitated by accessing established networks in Ottawa's first responder community. The First Responder Mental Health Network Collaboration (FRMHNC), a committee that includes organizational representation at all levels of government, established to review and implement evidence-based approaches for first responder mental health, were crucial collaborators of the study. FRMHNC members representing the Ottawa Paramedic Service distributed study materials (i.e., recruitment

posters and organization-wide emails) to facilitate recruitment. The Ottawa Paramedic Service also provided their members with one-hour of paid time to encourage paramedics to engage in the study. Paramedics interested in participating in the study were preliminarily screened for eligibility over the phone and were scheduled for an interview. Participants were recruited based on meeting the sub-group criteria for both the TDF and CFIR interviews. The TDF included individuals who at the time of the interview: 1) had previously sought treatment for a mental health disorder; 2) were members of their respective Peer Support Group; 3) were a frontline paramedic. The CFIR included members who: 1) were in a mid-level or senior command position; and/or 5) were members of the union.

3.4.4. Eligibility Criteria

Participants were individuals who, at the time of the interview, were employed by the Ottawa Paramedic Service, WSIB, or CUPE 503. Individuals were excluded from participating in the study if they were not currently employed by the Ottawa Paramedic Service (i.e., were retired or were on long-term disability), were civilians employed at the Ottawa Paramedic Service, or if they lacked the capacity or willingness to provide informed consent to participate in the study (as outlined in Table 3).

Table 3. Participant Eligibility Criteria

Inclusion Criteria	
1.	18 years of age or older.
2.	Is currently employed by the Ottawa Paramedic Service (including communications officials and those on short-term disability, maternity or paternity leave, and members in the return-to-work process).
3.	Willing and able to provide informed consent.
Exclusion Criteria	
1.	Is a civilian that is currently employed by the Ottawa Paramedic Service.
2.	Is not currently employed by the Ottawa Paramedic Service (including retirees and those on long-term disability).
3.	Unwilling to comply with study procedures.

3.4.5. Data Collection Process

The semi-structured qualitative interviews were conducted individually face-to-face over five months, from June to October 2019. The TDF interviews lasted between 56 and 128 minutes (M=78.51, SD=29.7), and the CFIR interviews lasted between 71 and 176 minutes (M=124.33, SD=37.9). The use of open-ended questions facilitated an in-depth exploration of paramedics' preferences for help-seeking and accessing mental health care in the TDF interviews and the examination of internal and external factors influencing the feasibility and long-term sustainability of the clinic in the CFIR interviews. The decision to conduct individual interviews was appropriate as it allowed participants to openly discuss both individual and organizational barriers and facilitators without fear of judgement or potential ramifications, or concerns regarding confidentiality.

Interviews were conducted in community settings at times and locations identified as most convenient for participants where confidentiality could be better protected. The interview locations included the Professional Building on The Ottawa Hospital's (TOH) Riverside campus and at the Ottawa Paramedic Service's headquarters. The option for telephone interviews was made available to participants, should they have been unable to participate in an in-person interview; however, all study participants preferred to complete their interviews in-person. During the interviews, all participants were provided with the opportunity to speak in either English or French; however, all participants chose to complete their interviews in English.

This writer took field notes during each interview. To support confidentiality, participants were instructed to refer to themselves by their participant identification number throughout the course of both the TDF and CFIR interviews. Demographic statistics were collected from all

participants and data was entered into a Microsoft Excel spreadsheet following each interview. Demographic statistics that were collected included:

1) Date of birth (month and year);
2) Age (in years); and
3) Gender (male, female, non-binary/third gender, prefer not to say, or prefer to self-describe).

All interviews were digitally recorded using a digital audio recording device for ease of use and were later transcribed. Data was transferred from the recording device following each interview, was password-protected, and transcribed professionally by Capital Transcription and Translation Services Inc. The transcripts were transcribed verbatim and were anonymized by the company. Following the receipt of the transcribed paramedic interviews, a 10-minute portion of the transcripts were validated against the audio file to verify the accuracy of the transcription, by the respective interviewer (Clark et al., 2017). All errors were included in tracked-changes using Microsoft Word. Following the validation, the interview transcripts were uploaded into QSR International's NVivo 12 Pro (for PC), a qualitative data analysis software (QSR, 2012). This writer further de-identified, and stripped personal identifiers from all interviews, as needed, during data analysis (Stokes et al., 2018; Warner et al., 2018). The consolidated criteria for reporting qualitative research (COREQ, (Tong et al., 2007) was used to verify that all components of the research were reported in this thesis (Appendix C).

3.5. Data Analysis

The primary purpose of the TDF data analysis was to clarify the critical frontline paramedic barriers and facilitators to help-seeking and accessing mental health care in the clinic. The TDF

data analysis is reported in Chapter 4. Refer to Appendix D to view the TDF Data Analysis Plan created for the purpose of this thesis and Appendix E to access the TDF Codebook.

3.5.1. Phases of Analysis - CFIR

The primary purpose of the CFIR analysis was to clarify critical barriers and facilitators of the clinic's long-term implementation and sustainability from the perspectives of mid-and senior management paramedics and the union. Barriers and facilitators were assessed by employing the CFIR as a determinant framework (Warner et al., 2018). An important component of this analysis included assessing whether the CFIR's domains and constructs accurately classified the themes generated from the interviews. If new data-driven themes had been consistently generated beyond those included in the CFIR, they would have been added to the analysis (Namey et al., 2008).

The phases of analysis followed the steps for conducting a deductive thematic analysis (Braun et al., 2019; Braun & Clarke, 2006, 2012, 2013), in addition to the inclusion of pilot coding. The choice of conducting a thematic analysis was appropriate given the intent of the study, and that the research questions, data collection method, and analysis were guided by the CFIR. Further, thematic analysis is a method in its own right which offers flexibility as it can be conducted in several different ways (Braun & Clarke, 2012, 2013; Joffe, 2011).

The first component of the analysis included identifying a thematic framework. This was selected a priori and was the CFIR. Refer to Appendix F to view the CFIR Data Analysis Plan created for the purpose of this thesis and Appendix G to access the CFIR Codebook. Both documents were created by this writer for the purposes of this thesis. Thereafter, the qualitative interviews were transcribed, and the thematic analysis was conducted in accordance with the following seven phases:

Phase 1 (Familiarization with the Data) included reviewers involved in the analysis (i.e., VT - all interviews; and SH - pilot interview) immersing themselves in the data (audio recordings, transcripts, and field notes) to become familiar with the complexity and scope of the interviews (Braun et al., 2019; Braun & Clarke, 2006, 2013; Nowell et al., 2017). This included the repeated re-reading of the transcripts from an active perspective that included searching for meanings and patterns, beginning with reading through the transcript in its entirety once, at minimum, prior to beginning coding in order to become familiar with all aspects of the interview data which could facilitate the generation of ideas and identification of potential patterns (Braun et al., 2019; Braun & Clarke, 2006, 2012, 2013).

Phase 2 (Generation of Initial Codes) was completed by the reviewers (VT and SH) after having familiarized themselves with an initial participant interview (this writer completed this stage for all interviews) to use as a pilot coding (further defined in Phase 3) session. Before completing the pilot coding, the reviewers (VT and SH) did not identify any additional initial codes using the CFIR Codebook (Appendix G). No additional codes were identified during this phase (Nowell et al., 2017).

Phase 3 (Pilot Coding) was completed in four stages by the reviewers (VT and SH).

- *Stage 1* included independently pilot coding one pre-agreed transcribed interview. The pilot coding included indexing sections of the transcript to codes that reflected relevant CFIR constructs across the five domains (Warner et al., 2018). All analysis was completed using NVivo 12 Pro. NVivo was used to assist with the compilation, organization, and coding of the interview data.

- *Stage 2* included the comparison and review of the coding to resolve discrepancies in the pilot coding. The reviewers (VT and SH) met to discuss the coding, challenges experienced, level of agreement between reviewers regarding how the coding fit within the themes, and resolved discrepancies (Campbell et al., 2013; Kurasaki, 2000). Discrepancies were discussed until consensus was reached, and if consensus could not be reached, a third-party reviewer (Jennifer Smith, a Ph.D. Student) was designated as an arbitrator. The process of agreement included statistical agreement and consensus coding, which resulted in a blend of two approaches. Cohen's Kappa coefficient was used to assess inter-rater reliability (Atkins et al., 2017). The level of agreement needed between the two reviewers (VT and SH) was a minimum Kappa value of 0.40 (i.e., fair to good agreement). However, a kappa score greater than 0.60 was used as a target across all CFIR domains as an acceptable level of reliability (Atkins et al., 2017). An audit trail in Microsoft Excel was used to document the decision-making process during the pilot coding reconciliation. This document also included the documentation of which text was attributed to which domains and was used to resolve disagreements. Common disagreements included coding the same text to different CFIR domains.
- In *stage 3*, this writer generated a summary table in Microsoft Excel of the pilot coding to illustrate the domains and constructs. Upon completion of the summary table, the reviewers (VT and SH) agreed that it accurately reflected the discussion in stage 2.
- In *stage* 4, this writer coded a second interview and tested it against the summary table generated after the first interview. This process confirmed that the codebook was complete and had been checked for representativeness. Thereafter, this writer coded all remaining interviews.

Phase 4 (Searching for Themes) was completed by a single coder (VT), which included four stages.

- *Stage 1* consisted of familiarizing herself with the remaining data by reviewing and reading notes, interview transcripts, and field notes, in addition to determining the data saturation point.
- *Stage 2* included completing the analysis of the remaining interview transcripts and indexing the codes to the interview transcripts using QSR NVivo 12 Pro.
- *Stage 3* included allocating quotes from the transcripts to the relevant CFIR domains and constructs.
- *Stage 4* included generating a summary table of individual transcripts after each coded interview using the template generated during the pilot coding in Phase 3.

Phase 5 (Reviewing Potential Themes) was completed by a single coder (VT), which included generating themes (i.e., a broader consolidation of codes into categories), and reviewing the themes to ensure that they were useful and presented an accurate representation of the coded data and entire data set (Braun & Clarke, 2006, 2013).

Phase 6 (Defining and Naming Themes) was completed by a single coder (VT). Naming themes included coming up with a brief and easily understandable name for each theme. Defining the themes included expressing exactly what was meant by each theme and determining how it helps to further understand the data (Braun et al., 2019; Braun & Clarke, 2006, 2012, 2013). Thereafter, this writer and SH met to discuss the generated themes and their purpose, what was unique and specific about each theme, how they were named, and their respective definitions (Braun & Clarke, 2012, 2013).

Phase 7 (Producing the Report) included the final stage of the thematic analysis. This phase involved completing the final analysis and write up of the results, detailed within this thesis (Braun & Clarke, 2006, 2012, 2013). A descriptive and essentialist approach was taken, and extracts presented in Chapter 5 are illustrative in nature.

3.5.2. Demographic Data

Demographic data was reported using descriptive statistics and was analyzed in Microsoft Excel. Categorical data was reported using frequencies and percentages. Due to the high proportion of males in the paramedic population, a gender-based analysis plus (GBA+) was not possible.

3.6. Research Ethics

3.6.1. Research Ethics Board Approvals

This study was reviewed and approved by the Health Sciences and Science Research Ethics Board (REB) at the University of Ottawa (ethics file number: H-07-19-4802). Two letters of administrative approval, dated 28-Feb-2020 and 31-Jul-2019, respectively, are enclosed in Appendices H and I. The parent study was approved by the Ottawa Health Science Network Research Ethics Board (OHSN-REB) at TOH (reference number: 20180903-01H). The study design and conduct were informed by the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2) and the International Conference on Harmonisation Guideline for Good Clinical Practice E6 R2 (ICH GCP E6[R2]). Compliance with these standards provides assurance that the rights, safety, and well-being of study participants were protected, and that study data are credible. Further, this writer is a Certified Clinical Research Professional (CCRP). The CCRP designation is an internationally recognized professional certification

maintained by the Society of Clinical Research Associates in the United States. This writer has held her CCRP professional certification since 2015.

3.6.2. Informed Consent and Suicide Risk Management Procedures

Informed consent and suicide risk management procedures were in accordance with ethics approvals from the Health Sciences and Science REB and the OHSN-REB. All associated information regarding study participation, including but not limited to: confidentiality; privacy; data management; risks of participation, including the potential for qualitative interview questions to potentially provoke emotional distress in some participants who may have difficulty recounting their mental health experiences, were addressed in the Informed Consent Form and during the Informed Consent discussion. Study participants were informed about the interviewer's background and that they were not a mental health professional ahead of signing the Informed Consent Form. Participants were, however, notified that there were trained mental health professionals available either on-site or by phone in the event of a mental health emergency. All participants were provided with a crisis card in the event that they felt emotionally distressed after the interview from having discussed experiences related to their mental health. The crisis card contained information on calling 911 or presenting to an emergency department if in crisis. The card also included the contact information for the Mental Health Crisis Line and the Ottawa Distress Centre. Most participants, if not all, declined to take the crisis card, and none of the paramedics requested or required any services from a mental health professional during or after the conclusion of the interviews.

3.6.3. Confidentiality and Data Management

Confidentiality and data management procedures were in accordance with ethics approvals from the Health Sciences and Science REB and the OHSN-REB. All printed study-related documentation was double-locked within a locked filing cabinet in a locked office with limited access, at TOH, and digital copies of the documents were kept in the parent study's Microsoft SharePoint folder on TOH's server. All participants were assigned a unique participant identification number (i.e., P001), which appeared on all documentation, in order to maintain participant confidentiality. Participants were not identified in study presentations or publications, nor will they be identified in future presentations or publications. All participant records will be kept for ten years, in accordance with ICH GCP guidelines. In accordance with ICH GCP guidelines, participants' study information will not be released unless required by law.

Chapter 4: Manuscript

This chapter includes the academic article, "Applying the Theoretical Domains Framework to identify police, fire, and paramedic preferences for accessing mental health care in a First Responder Operational Stress Injury Clinic: A qualitative study." This article explores the TDF's application to identify and better understand critical barriers and facilitators to help-seeking and accessing mental health care in three first responder services in Ottawa, Canada. These results include the paramedic participants from this thesis within the context of the broader parent study to present the results alongside police and fire participant data.

Applying the Theoretical Domains Framework to identify police, fire, and paramedic preferences for accessing mental health care in a First Responder Operational Stress Injury Clinic: A qualitative study

Intended Journal: *Implementation Science*

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Abstract
Background: First responders (career and volunteer firefighters, paramedics, and police officers) are often exposed to repeated events with the potential to be psychologically traumatizing. Such exposures, especially when coupled with insufficient social supports and reduced healthcare-seeking behaviours, may contribute to poor mental health outcomes (e.g., traumatic responses, problems with mood, moral injury) relative to the general population. Despite this, a theoretically-driven, systematic qualitative study of barriers and facilitators of help-seeking behaviours has not yet been undertaken in this population. The current study used the Theoretical Domains Framework (TDF) (Cane et al., 2012; Michie et al., 2005) to identify and better understand critical barriers and enablers of help-seeking and accessing mental health care in three first responder services with an approximate total of 4,000 sworn and civilian members in Ottawa, the capital city of Canada.
Methods: Semi-structured qualitative interviews of 24 first responders (11 firefighters, five paramedics, and eight police officers) were used to identify critical barriers and facilitators to help-seeking and accessing mental health care. Initial participants were recruited using purposive sampling; thereafter, a snowball sampling technique was used to identify additional potential participants. Transcribed interviews were analyzed using deductive content analysis. The TDF was used to guide study design, interview content, data collection, and the content analysis.
Results: The most commonly reported barriers included concerns around lack of confidentiality, lack of trust, cultural competency, and stigma. Key themes identified in the interviews as influencing the target behaviour of seeking mental health care could be classified into six of the TDF's 14 theoretical domains: environmental context and resources; social influences; social/professional role and identity; knowledge; emotion; and beliefs about consequences. The results underscore the importance of environmental context and availability of resources in help-seeking and accessing mental health care in first responder populations.
Conclusions: While a wide range of barriers and facilitators were identified to influence first responder help-seeking and access to mental health care, environmental context and resources may be essentially important.

Keywords
Theoretical Domains Framework, Behaviour change, Implementation, Public Safety Personnel, First responders, Firefighters, Paramedics, Police, Mental health, Content analysis

Contributions to the literature

1) The current study will be instrumental in developing evidence-based approaches to accessing mental health care for first responders.
2) The study builds on recent research assessing attitudes of public safety personnel towards professional and non-professional mental health supports, and associations between training programs and mental health support.
3) The results can assist in developing a model of care, which may be broadly applicable to other first responder services across Canada and to other public safety sectors.
4) This paper can serve as a useful resource for first responder organizations to inform service development and delivery of existing services.

Background
Public safety personnel (PSP), referring in part to border services officers, public safety communications officials (e.g., 911 operators, dispatchers), correctional workers, firefighters

(career and volunteer), Indigenous emergency managers, operational and intelligence personnel, paramedics, police (municipal, provincial, federal), and search and rescue personnel (CIPSRT, 2019; Public Health Agency of Canada, 2020), are frequently exposed to potentially psychologically traumatic events (PPTE; (CIPSRT, 2019)) at rates much higher than that of the general Canadian population (Carleton et al., 2019; Hartley et al., 2011; Kilpatrick et al., 2013; Komarovskaya et al., 2011; Perrin et al., 2014). Routine exposure to dangerous, often life-threatening PPTE places PSP, including those often identified as first responders (i.e., career and volunteer firefighters, paramedics, and police officers), at an increased risk for poor mental health outcomes, including post-traumatic stress disorder (PTSD) (Benedek et al., 2007; Carleton, Afifi, Turner, Taillieu, Duranceau, et al., 2018; Kraemer et al., 2016). PSP also frequently experience symptoms of major depressive disorder, generalized anxiety disorder, alcohol use disorder (Carleton, Afifi, Turner, Taillieu, Duranceau, et al., 2018; Carleton, Afifi, Turner, Taillieu, LeBouthillier, et al., 2018; Di Nota et al., 2020), as well as suicidal thoughts, plans, and behaviours (Carleton, Afifi, Turner, Taillieu, LeBouthillier, et al., 2018; Di Nota et al., 2020; Hom, Stanley, Ringer, & Joiner, 2016; National Volunteer Fire Council, 2012; Nock et al., 2008, 2010; Stanley et al., 2015, 2016; Vigil et al., 2018). The prevalence of mental health problems and suicidal ideation (12.5%-14.1%) and plans (4.1%-5.1%) facing PSP appear much higher than the prevalence rate of 10.1% for diagnoses of any mental health disorder within the general population (Carleton, Afifi, Turner, Taillieu, Duranceau, et al., 2018; Carleton, Afifi, Turner, Taillieu, LeBouthillier, et al., 2018; Di Nota et al., 2020; Milner et al., 2017; Stanley et al., 2016; Statistics Canada, 2012b, 2017).

In fact, many individuals who require mental health care may not participate, delay, or do not pursue care (Corrigan et al., 2014; Jayasinghe et al., 2005). International research investigating barriers to mental health care in the general population across 24 different countries found that lack of perceived need for care and attitudinal barriers were most prevalent (Andrade et al., 2014). Among attitudinal barriers, stigma-related barriers are common (Andrade et al., 2014; Corrigan et al., 2014; Haugen, McCrillis, Smid, & Nijdam, 2017; Hom et al., 2016; Reavley et al., 2018). A systematic review on barriers to care and mental health stigma within first responders noted that the most commonly reported stigma-related barriers included concerns regarding confidentiality and potential negative career impacts (Haugen, McCrillis, Smid, & Nijdam, 2017). Other barriers included scheduling issues and a lack of awareness of where to access mental health care (Haugen et al., 2017). A recent online mental health prevalence study among Canadian PSP thematically content analyzed optional open-ended final comments (Ricciardelli et al., 2020) to start describing the process by which PSP decide to seek mental health care. This study highlighted PSPs stigma-related help-seeking concerns (e.g., how their colleagues subsequently view them), but also found that lack of awareness may limit knowledge and understanding of personal mental health care needs (Ricciardelli et al., 2020). Although providing a valuable starting point, the study did not focus on help-seeking and access to care and did not use a theory-driven, systematic approach to identify barriers to care in Canadian first responders and broader PSP.

A systematic review on the impact of health-related stigma in the general population identified stigmatization as having a moderate negative effect on help-seeking relative to other barriers and indicated concerns regarding disclosures were the most frequently cited barriers to care (Clement et al., 2015). Stigma was also reported as a recurrent barrier to help-seeking behaviour in research examining help-seeking and mental health service use (Corrigan et al., 2014; Haugen et

al., 2017; Hom et al., 2016; Reavley et al., 2018). Research investigating barriers to treatment utilization of mental health care across 24 different countries found that lack of perceived need for care and attitudinal barriers were most prevalent (Andrade et al., 2014). As such, many individuals who require mental health care do not pursue treatment, may delay accessing care, do not attend services, or drop out prematurely (Corrigan et al., 2014; Jayasinghe et al., 2005). A systematic review on barriers to care and mental health stigma within first responders noted that the most commonly reported stigma related obstacles included concerns regarding confidentiality and of potential negative career impacts as a result of seeking care (Haugen et al., 2017). Barriers to care included scheduling issues and a lack of awareness of where to access mental health care (Haugen et al., 2017).

Despite the high prevalence of mental health disorders and substantial barriers to care reported in the literature, no previous studies have used an implementation science framework to facilitate the development and implementation of mental health-related services for first responders. This study was therefore conducted to determine how best to provide acceptable and accessible mental health care to first responders. This study utilized an innovative implementation science framework in order to identify barriers to care and help-seeking behaviour across first responder sectors (police, fire, and paramedics) to inform the development and implementation of first responder specific mental health services. It was equally important to determine how to mitigate identified barriers to promote help-seeking behaviour in first responders to better protect their mental health.

To understand critical barriers and facilitators potentially impacting help-seeking behaviour for mental health care in first responders, the current study used the Theoretical Domains Framework (TDF) (Atkins et al., 2017) as a tool to guide data collection and analysis of qualitative interviews with first responders. The TDF was selected as it is used to target specific behaviour (i.e., accessing mental health care) while accounting for the complexity of the setting in which the intervention (i.e., the First Responder Operational Stress Injury [OSI] Clinic) is being implemented (Atkins et al., 2017; French et al., 2012). The current study included the prospective application of the 14 domains of the TDF influencing behaviour change and inform the implementation of the clinic. The delineated theoretical domains provide a clear framework for identifying barriers and facilitators that may influence behaviour change.

Methods

Study Design

This qualitative descriptive study used semi-structured one-on-one interviews, based on the TDF, with a sample of first responders from the tri-services of the City of Ottawa, Canada. The study used the TDF to identify critical barriers and facilitators impacting help-seeking behaviour in accessing mental health care in a First Responder OSI Clinic. The framework was also selected to inform data collection and analysis, and facilitate the guidance of implementation planning (Birken, Powell, Shea, et al., 2017). The design followed recommendations for conducting TDF-based qualitative research (Atkins et al., 2017).

Ethics
The current study was approved by the Ottawa Health Science Network Research Ethics Board at The Ottawa Hospital (reference number: 20180903-01H). Written informed consent was obtained from all participants.

Participants
Participants included 24 first responders (firefighters, paramedics, and police officers) from the City of Ottawa's tri-services (Ottawa Fire Service, Ottawa Paramedic Service, and Ottawa Police Service), and most of the participants from the police service were sworn officers. Individuals who were not currently employed by one of the tri-service agencies (i.e., retirees and those on long-term disability) were excluded from participating in the study, in addition to those younger than 18 years of age, and those who were unable or unwilling to provide informed consent.

Sample size
Prior to commencing recruitment, the initial stopping criterion for data saturation was defined as ten interviews per sector plus three interviews with no new emerging themes after the third consecutive interview (Francis et al., 2010). The intent was to conduct concurrent data analysis and coding alongside data collection as an iterative process until data saturation was reached. Due to delays with transcription, analysis and coding occurred after the completion of data collection. Data analysis revealed that data saturation was reached.

Recruitment
Five first responders who were known to the research team were initially approached to participate in this study. A snowball sampling technique was then used to identify additional potential participants. First responders recruited through purposive sampling (n=5) were carefully identified to reflect the tri-services and to capture a broad range of beliefs regarding help-seeking and accessing mental health care. Participants identified through purposive sampling were invited to suggest frontline first responders who had previously sought treatment for a mental health disorder and/or were members of their respective Peer Support Group. Participants were also invited to suggest others who were unhappy about the clinic's implementation to mitigate self-selection biases based on mental health care success.

Participant recruitment and dissemination of study-related information were facilitated by accessing established networks in Ottawa's first responder communities. The First Responder Mental Health Network Collaboration (FRMHNC) is a committee that includes organizational representation at the municipal and federal government levels that was established to review and implement evidence-based approaches for first responder mental health. FRMHNC members representing the tri-services distributed recruitment materials (e.g., posters, organization-wide information emails). Participating services provided one-hour of paid time for members to participate. Interested persons were provided with contact information for the study team, given information about the purpose of the study, invited to provide informed consent, screened for eligibility (i.e., $\geq$ 18 years old, currently employed by one of the tri-services, and willing and able to provide informed consent), and then scheduled for an interview.

Interview topic guide
Study team members had significant clinical and research experience with first responder populations. The team collaborated to develop an interview topic guide designed to identify key

factors that might influence help-seeking among first responders using semi-structured interviews with detailed discussion prompts. The interview topic guide was based on the 14 domains of the TDF modified to examine perspectives of frontline first responder participants who had previously sought treatment for a mental health disorder or were members of their respective Peer Support Group.

Procedure

Research team members (VT, AB, and SH) practiced the interview topic guide's administration before the first interview, which provided training for interviewers with no previous qualitative interview experience (VT and AB). The semi-structured face-to-face interviews were conducted individually from June to October 2019 and lasted between 36 and 156 minutes (M=96.59, SD=33). The use of open-ended questions facilitated an in-depth exploration of first responder preferences for mental health care. The choice of individual interviews was intended to support open disclosure and protect confidentiality. The interviews took place at times and locations most convenient for participants where confidentiality could be better maintained. Participants were interviewed outside of the workplace at The Ottawa Hospital, unless requested otherwise.

All interviews were digitally recorded and were later transcribed verbatim and anonymized by an external transcription company. The transcripts were then assessed by the respective interviewer (VT and AB) for transcription fidelity. Field notes were taken during the interviews by interviewers (VT and AB). Participants were asked to refer to themselves by their participant identification number throughout the interview to support confidentiality. Demographic data were entered into a Microsoft Excel spreadsheet. The Consolidated Criteria for Reporting Qualitative Research (COREQ) (Tong et al., 2007) was used for reporting all research components.

Analysis

Using the TDF, the analysis was designed to identify factors (barriers and facilitators) influencing first responders' behaviour when help-seeking and accessing mental health care, which could help to inform the design and implementation of a First Responder OSI Clinic.

All interview transcripts were de-identified and analyzed using NVivo 12 Pro, (QSR, 2012). The six analytic phases below were based on extant recommendations for conducting a content analysis (Elo & Kyngäs, 2008; Vaismoradi et al., 2013). The deductive analysis includes *a priori* identification of a thematic framework consistent with the TDF. A coding guideline was developed, including definitions for TDF domains and constructs, and applied examples. Transcripts were analyzed separately for each of the three tri-service sectors: police, fire, and paramedics.

- Phase 1 (*Preparation*) included researchers involved in the analysis (VT, AB, ZC, PB, JM) immersing themselves in the data (i.e., the audio recordings, transcripts, and field notes) to familiarize themselves with the complexity and scope of the interviews (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005; Vaismoradi et al., 2013). This phase included line by line reviewing of notes and transcripts, making note of any additional codes emerging from the transcript.
- Phase 2 (*Pilot Coding*) included independently indexing sections of a pre-agreed interview transcript to codes which reflected relevant TDF domains, and any potential

additional codes identified in Phase 1 in NVivo. No additional codes were identified in the analysis. New emergent themes generated beyond the TDF themes would have been added to the analysis (Namey et al., 2008).

- Phase 3 (*Organizing*) was conducted by two independent coders per sector (i.e., fire – AB, PB, JM, ZC; paramedic – VT and AB; and, police – AB, ZC, PB, JM), line by line coding to identify words, phrases, or sentences that reflected content, themes, or units of meaning within one or more of the 14 TDF domains (Atkins et al., 2017; Elo & Kyngäs, 2008; Vaismoradi et al., 2013) using a directional approach to content analysis (Hsieh & Shannon, 2005). Each utterance was coded into the relevant TDF domain(s) and was guided by the coders understanding of the TDF and relevant domain(s) (Sullivan et al., 2017) in NVivo.
- In Phase 4 (*Reconciliation of Coding*), after all of the coding was completed, the two independent reviewers met to discuss the coding, challenges experienced, level of agreement between reviewers regarding how the coding fit within the themes, and resolved discrepancies (Atkins et al., 2017). Discrepancies were discussed until consensus was reached. If consensus was not achieved, a third-party reviewer (SH) was consulted as an arbitrator. The process of agreement included statistical agreement and consensus coding, which resulted in a blend of the two approaches. Cohen's Kappa coefficient was used to assess initial inter-rater reliability (Atkins et al., 2017; Patey et al., 2012). The level of agreement needed between the two reviewers was a minimum Kappa value of 0.40 (i.e., fair to good agreement). A kappa score of greater than 0.60 was considered an acceptable level of reliability for TDF domains (Atkins et al., 2017).
- In Phase 5 (*Generation of Specific Beliefs*), the reviewers linked responses with specific beliefs that appeared in one or more transcripts to generate belief statements. The intent was to generate statements that conveyed a common meaning across multiple utterances. The statements were intended to capture the core thought expressed by participants (Francis et al., 2009; Islam et al., 2012; Sullivan et al., 2017), which were used to provide insight into the perceived role of the TDF domain in influencing behaviour (Francis et al., 2009; Patey et al., 2012). The statements represented similar themes or beliefs indicating a potential problem and/or influence on behaviours that were grouped (Atkins et al., 2017; Islam et al., 2012; Yamada et al., 2018). Separate belief statements were generated for each of police, fire, and paramedics. Discussion among coders to resolve discrepancies and refine coding occurred during Phase 5.
- Phase 6 (*Relevant TDF Domains*) included identifying relevant theoretical domains (VT) (Islam et al., 2012). To determine potential domain relevance for changing a target behaviour, responses had to contain specific beliefs that might be barriers or facilitators to changing the target behaviour and fulfilling the following criteria (Atkins et al., 2017; Brussieres et al., 2012; Islam et al., 2012; Patey et al., 2012; Sullivan et al., 2017): 1) reasonably high frequency of specific beliefs; 2) occurrence of conflicting beliefs; and 3) evidence of strong beliefs in affecting the behaviour.

Validity

To support the trustworthiness and credibility of the coding and the analytic process, all interviews were double-coded independently and included dialogue between the coders. Refinement occurred during the dialogue between the coders, and all discrepancies between

coders were resolved through consensus. Minor typographical errors in participant responses were also edited where appropriate

Results

Participants

Participants included 24 first responders (17 men, six women, and one who self-identified as non-binary) who were recruited to participate in the semi-structured qualitative interviews (Table 1). Participants were from the Ottawa Fire Service (*n*=11, 45.8%), Ottawa Paramedic Service (*n*=5, 20.8%), and Ottawa Police Service (*n*=8, 33.3%) and ranged in age from 28 to 60, mean age of 44.4 years (*SD*=9.9 years). Primary sub-group classifications included: 1) previously sought treatment for a mental health disorder (*n*=12, 50.0%); 2) members of their respective Peer Support Group (*n*=9, 37.5%); and 3) frontline first responders (*n*=3, 12.5%).

Table 1. Demographic Characteristics of First Responder Participants

Variable	Total (*n*=24)		Firefighters (*n*=11)		Paramedics (*n*=5)		Police (*n*=8)	
***M* Age, Years (*SD*)**	44.4 (9.9)		42.5 (10.9)		40.4 (9.8)		49.5 (7.1)	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Gender								
Men	17	70.8	9	81.8	2	40.0	6	75.0
Women	6	25.0	1	9.1	3	60.0	2	25.0
Primary Sub-Group								
Sought treatment for a mental health disorder	12	50.0	5	45.5	3	60.0	4	50.0
Peer Support Member	9	37.5	5	45.5	2	40.0	2	25.0
Frontline Member	3	12.5	1	9.1	0	0.0	2	25.0

SD standard deviation. One participant self-identified their gender as "other."

Domains identified as relevant by first responders

A total of 3,619 utterances from 24 interviews were coded into the 14 domains. Key themes emerging from the interviews were classified into six theoretical domains: *Environmental context and resources; Social influences; Social/professional role and identity; Knowledge; Emotion; and Beliefs about consequences*. Relevant TDF domains, as identified by participants, are described in Table 2.

All first responders declared their interest in and support of the clinic; however, several significant barriers to help-seeking and accessing mental health care were identified. All first responders underscored the need for the clinic to protect their confidentiality (*Environmental context and resources*), particularly from their colleagues and management (n=17). Arranging for individual PSP to go into the clinic alone and speak to their clinician directly, without interaction with other staff members was one suggestion for accomplishing this. Police participants especially emphasized a fear of being exposed while accessing mental health care. Fear of exposure in policing might be explained by the inherent need to be hypervigilant for their own safety on the job, *"The hypervigilance, a core symptom of PTSD – we train officers to be hypervigilant. We train you right from the get-go to have a core symptom of PTSD, and you need*

it to survive" (P5). The location of the clinic was also considered important for supporting confidentiality.

All participants indicated uniforms could be triggering for first responders (*Environmental context and resources*); however, there were conflicting opinions about making the clinic uniform-free. Firefighters and paramedics agreed that the clinic should be uniform free (n=14) citing the benefits as: 1) avoiding potential triggering cues; 2) differentiating between work and personal time; 3) removing identifiers and protecting confidentiality; and 4) reducing the impact of rank. On the other hand, paramedics indicated a uniform-free environment might create a barrier for clients who need to attend appointments while on shift, necessitating multiple clothing changes. Police also indicated a uniform-free environment may be a barrier when attending appointments while on duty, because of specific vocational requirements (e.g., acting in their capacity as a police officer).

All participants indicated first responder specialized clinicians need to have sector-specific cultural competence (*Environmental context and resources, Social/professional role and identity, and Knowledge*). Participants offered examples for developing cultural competence, including going on multiple ride-alongs within each service, spending time in the workplace to observe the day-to-day stressors, and learning the terminology (n=23). Several participants described learning first responder terminology as important for effective communication. Some firefighters and police officers suggested that having clinicians who are former first responders would be beneficial. Police officers reported clinicians who have prior experience as police would avoid content being "lost in translation." Several participants also indicated clinical staff who interact with first responders need to be culturally competent, including administrative staff answering the phone. Participants also discussed first-hand experiences and knowledge of colleagues who felt they had caused clinicians psychological harm by describing their experiences, reinforcing the importance of cultural competence in ensuring that clinicians who work with first responders are knowledgeable of the sectors respective culture and vocations.

Stigmatization was highlighted in four theoretical domains: *Environmental context and resources, Social influences, Social/professional role and identity, and Knowledge*. Stigma was manifested in *Environmental context and resources* as confidentiality concerns when seeking or needing care; concerns about clinic location; and concerns about uniforms as identifiers. In *Social influences*, all participants reported a fear of being perceived as weak for either needing or seeking mental health care. Stigma in firefighters was illustrated by reluctance to speak freely about their mental health. Paramedics (n=5) reported that stigma is deeply entrenched in their work environment, where it is common practice to make fun of or ridicule those with mental health problems and those who talk about or attempt suicide. There is negative judgement of those who seek mental health care, including those who take psychiatric medication for anxiety or depression. *"If it's something like a suicide attempt or suicide ideation…that's still a huge stigma within our organization, especially because we deal with patients who have suicidal ideation pretty close to every shift…we're, so I hate to say critical of our patients for when they don't succeed. It sounds awful, but we're like, you know, this is the fourth time I've picked you up. Haven't you figured out how to take enough pills yet?…and then you're talking to crews after, and…the banter back and forth is like, 'Really, like with Google, couldn't you have figured out how to do it properly?'…then imagine if you were a paramedic in that room who has*

suicidal thoughts, you're really not going to open up to anything about that because we're making fun of people who can't complete suicide…" (PA2).

Police reported fear of and/or experience with receiving unsupportive commentary from management. They also reported concerns that their career progression would be blocked if they had a past history of mental health problems or if they sought mental health treatment: *"…somebody may see an application that's pretty good from somebody. Oh, isn't he the guy that, you know, for example, isn't he the guy that, you know, snapped?...Without any of them knowing any information about that male or female officer…they just hear mental health injury, so they're nuts. It's still very simple, like officers are very aware, but internally it's still like oh God, we might have to deal with that. You know, that person might not be okay or cool. They won't be trusted because they have mental health problems…"* (P14). In *Social/professional role and identity*, participants (n=17) reported concerns about being stigmatized if they were seen accessing mental health care. Participants also expressed feelings of vulnerability when discussing having sought mental health care. In *Knowledge*, paramedics noted that their experiences on calls influenced their perception of mental health. This was described as hiding their mental health symptoms and not wanting to be seen as similar to the patients on the mental health calls they respond to. One paramedic stated: *"…in our profession, people hide it really well…we pick up people with mental health issues, and they hide it well because they don't want to be seen as someone that's schizophrenic or, you know, shouting and yelling and hitting…*" (PA3).

Participants (n=14) also expressed frustration with the lack of culturally competent services and the continuity of services available to them (*Environmental context and resources*). Participants reported that the currently available internal and external resources, including their respective Employee Assistance Programs (EAP) and the Workplace Safety and Insurance Board (WSIB), are costly, difficult to navigate, unavailable when needed, and insufficient as the clinicians within these programs are not well trained to address the specific needs of first responders. A one-size-fits-all approach for EAP designed for all employees within a municipality was repeatedly described as insufficiently culturally sensitive. Police reported that because they have access to unlimited coverage for psychological services, they were able to access more appropriate care as a function of having the ability to choose their own clinicians. 1) [Fire]: *"I think they should be aware of the culture…whether it's fire culture, police culture, paramedic culture. They all have their different cultures. Just because we're all first responders, does not mean we're all the same culture…They have to be: A) aware of the culture, B) they've got to be aware of the language that we use…and what kind of stress that first responders are under in their respective fields…"* (F21). 2) [Paramedic]: *"I remember one place specifically, I called, and the reception lady was just horrible…It's like you hang the phone up and you're just like why bother. Like why bother? This isn't how I felt this was going to be…So for whoever is answering the phone, the first point of contact, I feel like almost needs some kind of mental health training as well to be able to field the calls and just keep in mind that if somebody's calling, this could be like their one reach out call, and if you're in a bad mood…that could be completely detrimental to their healing"* (PA3). 3) [Police]: *"You're looking at some pictures and a video, and you can't even stomach it. How are you supposed to treat these people who have been through it firsthand and offer some compassion and understanding?"* (P5).

Firefighters, paramedics, and police officers (n=11) described struggling with mental health challenges as isolating (*Social influences*) as a result of not knowing how to talk to others about their mental health issues or symptoms. This results in feeling isolated, alone, and being socially withdrawn. Interestingly, at least one paramedic reported that having his experiences validated by mental health professionals helped to counteract his isolation: *"…one of the most cathartic things that I experienced during my journey was multiple professionals saying no, this is normal. People go through this, or you're not alone. You're not the only one, and that really helps in terms of feeling like you're isolated and you're fighting this all on your own"* (PA7).

Participants' concerns that their mental health challenges would signal weakness to their colleagues and management, served as a barrier to care (n=14 [*Social influences*]). Police reported not wanting to show any kind of weakness or vulnerability at work (n=4). Paramedics (n=4) expressed concerns about appearing weak for reporting problems after a PPTE when their partner was not affected by the same event: *"There's also the stigma of seeing me and my partner go to a call that's, you know, traumatic and the one person is completely fine, the other person is not. So there's that stigma there of like well if I go off work because this really bothered me but that person doesn't, like do people think I'm weak?...Do people think there's something wrong with me?…especially because we've always worked in partnerships. Because if one partner's fine, the other isn't there's that stigma of well, I don't see what the big deal is. The other person's fine and you're not. And that comes from peers, it comes from management, it comes from all levels…"* (PA3).

Gender was reported as a barrier by women participants across all sectors (n=4). Women participants reported gender-specific social barriers (*Social influences*) and perceived a need to appear "tough" or risk being discounted or taken advantage of: *"…as a woman, I feel like it's harder for us to cry or to ask for help because we're going to ultimately been [be] seen as weak or PMS'ing. I was told that before, like are you PMS'ing? [I: "From a male colleague?"] Yeah. But I just had somebody die. Like I feel like it's completely unrelated. So, I feel like as a woman, we have to look a bit harder than we are because they take advantage of us"* (PA15).

The duty to serve irrespective of current well-being was reported by both firefighters and paramedics (n=4 [*Social/professional role and identity*]). Participants reported that the duty to work came first and any consequences were secondary: 1) [Fire] *"…you kind of do, question that and wonder if, but at the same time, too, you also know that [if] somebody in another job was having a bad day. They're battling depression, say. And it's like things just are not good today, I can't make it into work. We don't have that option"* (F12); 2) [Paramedic]: *"Make it or fake it, that's our world…My job on the road is to turn that off to do my job to the best of my abilities and not let those outside stressors and all those things get to me… And police and fire, exact same…All the emergency workers when it comes down to doing their job, they do their job to the best of their abilities, and they will make it, or they'll fake it. But they will do their job…We deal with the consequences after"* (PA13). Police officers view their career as a calling, which becomes part of their personality (n=1): *"We're the ones who go in and fix things…I know for policing it's a calling and it's a career. It's not just a job, and it becomes part of your personality and becomes part of you…when I first started going into therapy for PTSD…the first thing they said is normally, we tell our patients stay away from whatever caused the PTSD…but you're a police officer. If I say that to you, then you can't be you anymore"* (P5). The participant

responses emphasized that the intertwined personal and professional identities need to be accounted for when operationalizing mental health care for first responders.

Police and paramedics (n=3) indicated that first responders are good at initial responses to PPTE, but often lack the knowledge and skills to manage long-term mental health consequences (*Knowledge*). The absent skills were cited as a barrier to help-seeking and identified as an opportunity for improving mental health.

Police, firefighters, and paramedics (n=20) reported being able to identify warning signs of mental health challenges in their colleagues (*Knowledge*); however, some also reported being unable to identify specific next steps to provide effective help. The lack of knowledge about how to help was identified as an opportunity for improving mental health. Paramedics (n=3) indicated members of their profession know how to hide mental health symptoms (e.g., substance abuse), which makes supporting peers difficult. Participants described working as a paramedic involves repeatedly responding to mental health calls, which creates a culture of not wanting people to know about mental health challenges for fear of being seen as similar to their patients.

All sectors (n=17) reported the emotional (e.g., anger, irritability), behavioural (e.g., being professional, ethical, compassionate, increased substance use, exercising, decreased social interactions), and physical (e.g., poor sleep, impaired daytime functioning, decreased energy, nausea) impacts of cumulative stress from PPTE exposures (*Emotion*). Participants described the negative impacts that changes had on both their professional and personal lives. A paramedic participant reported that *"…until I started my treatment…every time I would hear a hanging call, I was physically sick to my stomach"* (PA15).

Peer supporters from all three services (n=7) agreed that peer support provides a base knowledge of mental health, which can be further built upon by experience. Participants reported varying levels of access to internal and external training opportunities (e.g., participants noted having completed Critical Incident Stress Management training, SafeTalk, ASIST, conferences, information sessions on PTSD). A peer supporter from the fire service reported completing training sessions through their service (the Ottawa Fire Service) and described the availability of training opportunities as *"really good, and you learn more and more"* (F29). The peer supporter reported feeling adequately trained and learning more from hands-on experience. All participants described peer support as a beneficial resource, but not all participants reported feeling comfortable accessing peer support for mental health problems.

All sectors (n=21) indicated that involving spouses or family at the right time in mental health treatment can have beneficial outcomes (*Beliefs about consequences)*. Participants highlighted the value of having their spouses or family understand the requirements of a first responder vocation and being educated with respect to signs, symptoms, and potential solutions for mental health challenges.

Discussion

The most commonly reported barriers to help-seeking and access to care were confidentiality, lack of trust, cultural competency, and stigma. Training and knowledge of when others are struggling with mental health problems were identified as facilitators to help-seeking and

accessing care. Additional supports and education to make first responders more aware of the signs of emotional, behavioural, and physical impacts associated with stress from PPTE exposures may be beneficial in reducing stigma and increasing help-seeking behaviour (Clement et al., 2015; Reavley et al., 2018; Ricciardelli et al., 2020), rather than attempting to manage without support. Domains identified as less relevant included: *Skills; Optimism; Beliefs about capabilities; Goals; Behavioural regulation; Memory, Attention and decision processes; Reinforcement; and Intentions*.

Results from the current study indicated that participants from all sectors anticipated or experienced adverse consequences for disclosing mental health problems and seeking help. The anticipated or experienced negative consequences included fear of being exposed, perceived as weak, or feelings of shame and embarrassment. These results were classified into four of the TDF's theoretical domains: *Environmental context and resources, Social influences, Social/professional role and identity, and Beliefs about consequences*. These results are consistent with past literature on barriers to care and mental health stigma, and their impacts on help-seeking and accessing care (Clement et al., 2015; Corrigan et al., 2014; Haugen et al., 2017; Ricciardelli et al., 2020).

The current results emphasized the importance of the clinic being uniform-free, with the potential for certain exceptions, and not to be located at or near any hospitals with emergency departments where first responders are known in their professional capacity. This would help to maintain confidentiality by limiting the possibility of coming into contact with colleagues or management. The emphasis on protecting the confidentiality of first responders seeking care was reported across all sectors. Indeed, concerns about potential disclosures causing stigmatization have previously been cited as the most frequent barrier to care (Clement et al., 2015). Due to the nature of policing work, it is difficult for members to open up to others about traumatic events they have witnessed. One participant described the inability to discuss a PPTE as a barrier to care if a member is under investigation by the Special Investigations Unit (SIU). This participant reported that under the Police Act, officers cannot engage with people not involved in the event until after the SIU interview. If members do not follow the act, they can be charged, according to him.

Participants highlighted the need for the clinic to be discreetly and centrally located, with accessible parking. Most importantly, participants identified cultural competency as a core component of the training and experience of all clinicians. Cultural competency was noted within three theoretical domains: *Environmental context and resources, Social/professional identity, and Knowledge*. Participants explained that clinicians should also be informed regarding the culture and stressors that first responders encounter and those specific to each sector. Interviewees also opined that cultural competency needs to also extend to administrative staff, including those answering clinic phones.

Stigma was often identified as a critical barrier to help-seeking and accessing mental health care within four theoretical domains: *Environmental context and resources, Social influences, Social/professional role and identity, and Knowledge.* Stigma related to mental health and the pervasive fear of being perceived as weak when accessing care is supported by recent Canadian research on PSP (Ricciardelli et al., 2020). The most frequently reported barriers to care among first responders involve fears of confidentiality breeches and negative career impacts (Haugen et

al., 2017). Other important barriers have included difficulty scheduling appointments and knowing where to seek help (Haugen et al., 2017; Stanley et al., 2016). The current results also identified a lack of available services as a barrier to mental health care.

Finally, participants cited their leadership as often reinforcing barriers to help-seeking. For example, paramedics reported confusion about how many sick days were available and fears of being reprimanded for using more than four sick days within six months. The sick leave policy during the data collection period required a meeting between the paramedic, Supervisor, Commander, and union representative for paramedics who took more than four sick days in six months. Paramedic participants also raised concerns about employment-related discrimination (e.g., limits to career advancement) for taking more than 14 sick days in a year. Understanding and addressing barriers first responders experience when seeking care is important for providing effective and competent mental health care. Pervasive problems with mental health stigma appear to be particularly problematic barriers that need to be resolved (Clement et al., 2015; Corrigan et al., 2014; Ricciardelli et al., 2020).

Strengths, limitations, and directions for future research

Key strengths of the current study include engaging three different first responder services and using structured interviews rather than a survey-based approach. Key limitations of the current study include sampling size and self-selection biases. The study results will inform the next phase of the research, which includes implementing a First Responder OSI Clinic in Ottawa, Canada. The results serve as a useful resource for first responder organizations to inform service development and delivery of internal and external services. Information on treatment preferences and current treatment options could be utilized to address poor and/or ineffective treatment uptake and access to care. Future directions could include additional mental health training to increase knowledge, decrease cynicism of first responders, and lingering organizational-level stigma in first responder organizations, in addition to further research on a larger scale about how first responders wish to obtain mental health care.

Conclusion

The current study results underscore the pervasive and troubling nature of several barriers to implementing a First Responder OSI Clinic. Help-seeking and accessing mental health care appear heavily influenced by environmental context and professional resources. Current internal and external mental health care services were perceived as costly, difficult to navigate, and often unavailable when needed. Participants stressed the importance of cultural sensitivity for mental health care professionals. The most commonly reported barriers included concerns about confidentiality and stigma – particularly not being seen as weak. First responder participants described being recognized as strong, as a core component of their personal and professional identity. Innovative solutions to overcome the barriers should shape the clinic design, planning, policies, and procedures. Researchers and relevant first responder and PSP stakeholders may also find the current results help to inform potential barriers for diverse activities related to improving mental health.

Endnote

Transcribed data presented as illustrative quotes have been minimally edited to remove details like position and details regarding trauma as they were particular to individuals, potentially identifying them.

Abbreviations
CIPSRT: Canadian Institute for Public Safety Research and Treatment; DRDC: Defence Research and Development Canada; OSI: Operational Stress Injury; PPTE: Potentially psychologically traumatic event; PSP: Public Safety Personnel; PTSD: Post-Traumatic Stress Disorder; SD: Standard deviation; SIU: Special Investigations Unit; TDF: Theoretical Domains Framework

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Availability of data and materials
The qualitative datasets generated during and/or analyzed during the present study are not available for sharing. Ethical approval for the current study prevents data sharing.

Authors contributions
VT, SH, RNC, IC, AH, SL, DF, MJH, KT, and DC contributed to the overall concept and study design. VT and AB collected study data and AB, VT, PB, ZC, and JM were major contributors to the analysis. VT drafted the manuscript. All authors commented on the earlier drafts, critically reviewed, and approved the final manuscript.

Reflexive account *(Authors' information)*
Some of the authors have previously worked with first responders/public safety personnel, military, and/or Veterans (VT, RNC, IC, DF, AH, MJH, SL, and SH), and two of the authors are paramedics (SL – is a Commander and an Advanced Care Paramedic, and ZC – is a Primary Care Paramedic). The paramedic portion of the current study forms part of the first author's MSc thesis.

Competing interests
The authors declare that they have no conflicts of interest to report with respect to the research, authorship, and/or publication of this article.

Consent for publication
Not applicable.

Ethics approval and consent to participate

Ethics approval was granted by the Ottawa Health Science Network Research Ethics Board at The Ottawa Hospital (reference number: 20180903-01H). Written informed consent was obtained from all participants.

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Table 2. Summary of relevant TDF domains and sample quotes for first responders

		Fire		Paramedics		Police	
Domains	**Belief statements**	**Sample quote**	**Frequency (out of 11)**	**Sample quote**	**Frequency (out of 5)**	**Sample quote**	**Frequency (out of 8)**
Environmental context and resources	**A first responder clinic should protect clients' confidentiality**	"Maybe you could tell them what room they're going to be in, so they could just go directly to the room, as opposed to waiting in a lobby…because I think some of them are maybe embarrassed about doing it in the first place." (F29)	7	[what could facilitate accessing mental health care] "...knowing that the confidentiality is there, that your workplace won't know about it if they don't need to." (PA2)	3	"Because there is such a negative social stigma, exponentially so with police because that's all we deal with is crazy people, I have been known to the use the expression "Don't get too close, you'll catch crazy." It's seen as a negative." (P6)	7
		"As crazy as that sounds, like I said, you can't drive to Ben Franklin Place in a city building, walk through a public parking lot, sit in a waiting room with a glass wall, with 10 chairs, and then, I don't know, your colleagues walk in. I don't know how you set that up, and whether you're feeding into the stereotype or whatever else, that doesn't matter at this point. We have to keep this now as it starts to open up very, very private." (F31)		"If we know you're not associated in any way with our management, like it's confidential." (PA15)		"If you put it in with a lot of other facilities, that's not a bad thing. It increases the anonymity of the reasons why officers or members may want to go there. So, it's not necessarily identified that oh, so and so is walking to this one lone house or building and that's the OSI Clinic and everybody goes. So, you start doing that. If you have a standalone, then it's very easily the confidentiality goes down, the level of it goes down. If you put it into…something like a City of Ottawa site or facility whereby there's lots of other things going on. It increases your anonymity. So, there's pros and cons to both sides" (P11)	
						"I'd like to go into the clinic alone and speak to the health care professional directly, not a receptionist and then fill out a bunch of forms and then to a person who is going to—I want it to be done discretely and one with the least amount of hassle and exposure is the main thing." (P14)	
	Therapists at a first responder clinic should be educated and have knowledge of the working conditions of first responders	"Trained and educated or receive training and education...If they're former first responders, that would definitely be helpful." (F29)	10	[issues accessing mental health care] "And a lot of times it's because the therapists don't have a good handle on the first responder culture." (PA2)	5	"…I think that goes with the ride-a-long and then that confidentiality. When they come on the ride-a-long, I'm not bringing my recorder. I'm not taking notes. I'm here in my cargo pants and my hoodie and my observer badge and I'm here to learn. I'm not here to analyze you. I'm here to learn and they hear the lingo and the language and they give you that idea of maybe they're just telling a story and then when we interject 10 f-bombs, it's not bravado, it's maybe a way of coping because we use humour. Sometimes we use it inappropriately, but when it's used within the confines of our police family or people, it's not derogatory, but it's helping us cope…there's a line. I get it. I'm not blind to that at all, but a lot of times it's a default and it helps us cope, especially in the	8

Environmental context and resources (con't)			moment. And I think that having a little understanding of that and maybe a little patience for it would help…They're saying this stuff to try and cope…I think it would be for all [all first responders] the same. I have a ton of respect for all of them, but the medics, like wow. Like that's a whole another level of patience and stress and stuff that they have to deal with. I mean training somebody to deal specifically with this, they probably need to be exposed to all of it, or you'd have your people that are, you know, they've done the ride-a-longs with the police and then they spend a lot of time with the medics and they spend a lot of time with the firefighters and stuff. Like we all have our different problems and stresses, right?" (P4)
	"I don't need somebody wanting to listen with enthusiasm. So that would be having the right people in the right place and aware of what we are, and who we are, what kind of our special needs are and that sort of thing. And that's not something that an individual's going to necessarily pick up on a half-day session at the training centre…" (F12)	"Well just for that simple fact that you're not traumatizing them…I went to see a counsellor and was telling them about a call or why I was upset and this kind of stuff, and I left there feeling like I had traumatized her, and she was like so upset. I'm like wow. This did not go as planned. And she had no clue how to help me. So that's a big thing is like you don't want the person who's there to seek help feel like they injured somebody that's trying to help." (PA3)	"Absolutely. Credibility is going to be huge. I would rather go to the doctor who's had lots of experience with first responders…I think they should go to our PDC and go through some of the use of force scenarios…You're looking at some pictures and a video, and you can't even stomach it. How are you supposed to treat these people who have been through it firsthand and offer some compassion and understanding? So, the more you become part of us and part of that family, so I would encourage them to go on ride-a-longs." (P5)
		"A significant one is understanding the job, so familiarity with a particular role and the stresses related to that role. I have worked with mental health professionals of all backgrounds who it's very quickly obvious that they don't quite understand the pressures and the needs and the day-to-day life of a paramedic. It's very difficult to relate, and that can be anywhere from shift work to end of life care. There's some people that just don't get it." (PA7)	"…it makes them very reluctant to open up and show any weakness because they're probably very concerned that you're going to use that against me to criticize me or to charge me or do you know what I mean? So, I think that that's probably part of the stigma and the barriers, so just the awareness of that for the professionals." (P10)
Environmental context and		"It can be difficult and it's very difficult some of these docs that are recognized by our Peer Support or recognized by other people that can actually...have maybe a little bit more experience going down that first	"I think it would be beneficial to have police officers who are counsellors or psychologists or social workers, present and overseeing some of these files so that they can relate, because a lot of things get lost in communication and translation when we're speaking as a police

resources (con't)				responder, military environment. When I was speaking to a counsellor or he was a psychologist... the second visit I realized that he's not the guy I should be talking to because I watched him turn white on one of my calls and I'm looking at him and going it's not that big of a call, trust me. And I realized, no, I have to talk to people that know what they're doing." (PA13)		officer and nobody really knows what it's like." (P14)	
				"It goes back to some of my friends telling me the story of the psychologist is actually crying or making faces when you tell them the stories. So, to have maybe people trained…" (PA15)			
	The first responder clinic should be uniform free	"I think you're potentially going there to kind of escape work, so I think uniform free works." (F29)	9	[uniform-free?] "I think that would probably be best, the reason being, depending on how it's set up, there's a good chance you will probably run into somebody you may know, and a uniform might not be what they need to see that day. It may not bode well. I mean, they might be okay with you, especially if you're still at work and seeking help for anxiety that's one thing, but if you're then crossing paths with someone who never wants to see a uniform again, may not be a good idea. So, I think more for the protection of kind of others." (PA2)	5	"...we've had officers have their guns taken away. So, if they're coming to you for assistance, I don't think they should be in a uniform. If they're on duty, I get it. If they're on duty and they're coming here for an hour, fine. Leave the uniform on, take away the gun. If you're off duty, then there's no need for the uniform. You shouldn't be in uniform anyways, unless you're going to work. And then again, your firearm should be at work." (P8)	4
Environmental context and		"…you want to be as anonymous as possible, right? If you're walking in there in a uniform, you're straight up identifying yourself, right? Especially if the building - not that I think there would be a huge sign saying it's a stress clinic, but if you're walking into this building with a uniform somebody could think, "Oh, that guys messed up. Look at him, he's a firefighter, and he's going in to get help." I think it should just be as anonymous as possible. I think if you had everybody show up in normal civil clothing, it would keep some anonymity to it, right? Especially, if you're in the hall, you're in the waiting room, and there's say I'm there and I		"...if it's uniform-free then it takes away any identifiers so that might be good. And as well, too, I mean there are people that can't even set foot into our headquarters, let's say because well they can't put on uniforms, so having it uniform-free might be a good idea. I feel a con to that is if someone was coming during their shift to talk and they're in uniform, that would be, I guess, the only deterrent was how would that work for that person? Would they have to change? Because we wouldn't really have access to going to change so I don't know, kind of 50/50 on that one. I think either or but you would hate to trigger someone that's there if		"That said if a first responders having a bad day or had a bad call or a bad shift or whatever else, why not have that option that they can show up? And I think it's important that your folks and the members that are accessing this clinic have an understanding that yeah, uniforms may happen. Some people have a real negative reaction to uniforms as a result of moral injuries on the job. I know many that don't even want to ever get back into a uniform and many that they look at the uniform and they go, yeah, I like my job as a cop. I don't like that badge, you know, Ottawa Police. I've heard the same about Fire. I've heard the same about Paramedics. That could be triggering, as you know. So, I think if people that are going to be accessing it are given that heads-up, you know what? There may be uniforms here. It's	

resources (con't)		see there's a paramedic there. If we're in uniform, we'll recognize each other, and you kind of see, "Oh, man, there's a lot of paramedics here. Paramedics are messed up." It would better if everyone was more or less anonymous." (F27)		someone else came in uniform." (PA3)		not a recommended thing. It's not something that's a no-go, because obviously I'd be a little annoyed if I was having a really bad day and then I needed some support and I talked to my boss to say listen, I want to go to the clinic for a bit. Do you mind? And I'm right here. It's my zone. Or do you mind if I take a half an hour because I want to touch base with somebody. I think I would be a little frustrated that the clinic would have it no; this is a no uniform zone. We all wear a uniform." (P11)	
				"I think it's important to separate and distinguish when you're working and when you're not. And one of the ways to do that is without a uniform. Not to mention it can re-traumatize some people who are there." (PA7)		*If police are able to come to the clinic in uniform, they may be required to act as a police officer (i.e., use of force)* "But if you start saying you can't bring your gun in while you're working in uniform, that's going to be a problem, because if you have a concern for someone being armed in there, then that concern should be brought to the organization to say they shouldn't be armed. And that doesn't breach confidentiality, but that's a careful thing that might screw your program. I think most people that are going to be coming and using your service are probably going to be off work, and depending on the circumstances, if they are under a lot of psychological issues, we will take their use of force options away." (P5)	
				"I think it should be uniform-free. As soon as you start wearing a uniform there's ranks visible and that may change people's perception. So yeah, I think uniform-free, that way everyone's on the same plane. Yeah, everyone's on the same level playing field." (PA13)			
				[uniform] "It's a trigger. Sometimes you are angry and there's a part of—I know some people, they won't be able to go back to the job, so seeing somebody wearing the uniform they cannot wear anymore, it's sad." (PA15)			
Environmental context and resources (con't)	**A first responder clinic should be discreet and not located at a hospital with an emergency department**	"…NDMC [National Defence Medical Centre], I think it would be fine, because I think it's a neutral location...Parking is open, easy, huge parking lot, and it's neutral ground...it's not a clinic anymore. It's	6	"Not hospital. In terms of location, I think the biggest thing is that when they show up, they feel that it's a place they want to come back to, that they're comfortable like they don't get the heebie-jeebies. But not a hospital	5	"Because it's not going to happen in your work. So, you want it to be off-site, right? So, whoever wants to come to the clinic can come off-site." (P8)	7

	not a hospital anymore. It's an administrative building, right?...I think NDMC - I think it would be a good spot." (F21)	and the thing that reminds them of their workplace. Just a place they want to come back to, like when they come, they feel like they made the right decision. No matter where the location that it's the right location, like a sense of wherever they show up, it should have a sense of like okay, this was a good decision. I'm in a good place." (PA2)	
	"Let's say a nice area, like where NDMC was type thing. Something with old growth trees and not having buildings all around it, or an area that there's not high-density traffic to get there, because that could possibly wind somebody up, right? Going in heavy traffic." (F30)	"Yeah, so it's just like a safe place that we go. We're not going to run into patients that we've picked up on the road let's say." (PA3)	"So, if you're going for treatment care is a long way of saying, you've got to be going to a place where it's going to be safe and that you feel I'm not going to be exposed. One of the big risks for me in stuff like that, and others, is who am I going to bump into when I go to your clinic? Who's going to know? So, the advantage that I had, and this might be something for your therapist to consider, is the person I saw had two locations: an official office, but also had an office out of their house. So, they had a different location, so they ended up putting me out of their house and made sure they aligned patients so that I would never bump into another police patient." (P5)
		"Riverside Hospital is pretty good. Yeah, it's somewhere central. It's close to the highway. If this clinic's going to be serving Ottawa, then it needs to be somewhere central in Ottawa…as long as it's not a place where you're going to be hearing sirens constantly." (PA7)	"Well definitely you don't want it near emerge because police are in and out of there all the time. I think what you need to do, because I know you have to have a building some place, I think if you have the location, one of the big things for people suffering from trauma is empowering them to give them some control back in their lives. So, give them the option: do you want to come here? And I'm sure a lot of your doctors probably have private practices elsewhere as well, it's just you don't want to go to a medical building where there's the chance of—and I've had it happen to me where I've been at some place with a family member and someone I knew came in with a family member—and it was very uncomfortable for both because of where we were." (P5)
Environmental context and resources (cont'd)		"See if it's at the General or the Civic, we see too many of our colleagues walking around...At the Riverside, most of us don't go there, you know, the professional buildings there, all that sort of stuff and that kind of thing. And I was thinking would I go to the General? Like man, I walk past	"…I would like a bricks and mortar facility someplace, centrally located that is non-descript, that is not attached to any hospitals but is affiliated with a hospital. Obviously, we have the Royal Ottawa. My people will never walk into a mental health hospital to receive care. They probably will never do that. If you have a non-descript building that's centrally

				how many people that I know from emerge or my own colleagues from there seeing me coming in. When you see somebody in civies at the hospital, hey what you doing? What you up to? Oh, I'm going up to the OSI Clinic. Oh. And then we're back to stigma, right?" (PA13)		located someplace, with ample parking…and they can walk in and they can see a friendly face, potentially a peer support coordinator or people they get to know, and they welcome there and that's where they get their treatment, that's where I see the benefit of this is it can be very much like it's like walking into a familiar location, right? And it's not sterile and it's not hospital-like and it's certainly not a bunch of people with lab coats walking around...That is not going to go over well with my people, because they don't see themselves as crazy, right? Or they're afraid of people labelling them 'crazy'…" (P1)	
				[Riverside hospital - potential location suggestion] "Oh, I can see how for few people it could be a trigger, but there's no emergency here, like we don't bring people here via ambulance. So, for me, like it's okay. And other hospital I feel like it will be a problem because for sure you could meet somebody on duty. Here, you don't meet people." (PA15)		*[I: So, confidentiality would be key for the location.]* "I mean I can't speak for the medics and fire, but I can tell you right now, the more years you have on as a police officer, you have trust issues." (P4)	
	Current mental health services available to first responders may not be well trained to address their specific needs	"the City has EAP [Employee Assistance Program], but then they have EAP for EMS and fire based on a budget that they receive. And we've had pretty good response from the membership that individuals have sought out marriage counselling, addictions, financial guidance or whatnot. But any time you get into anything a little bit more meat and potatoes: mental health and whatnot, it fell so grossly short." (F12)	5	"There's a lot of frustration with WSIB [Workplace Safety and Insurance Board] and all these other administrative things that they have to deal with that there's lack of continuity. So, I talked to this person. I've talked to this case worker and people get really frustrated with that." (PA2)	5	"I've heard so many horror stories of officers going to see EAP and their counsellors are - well, I know of officers that have gone and said listen, you know, counsellor was there, their feet up in their Birkenstocks and just chilling and their speciality is dealing with children and stuff like that, but that's who they got referred to. We've come a long way since those days. I've heard stories of counsellors being shocked almost in tears - well in tears because the cops are telling them this is what I'm dealing with and they're almost like throwing up their hands—I don't know what to do with you." (P11)	4
Environmental context and resources (cont'd)		"…I've personally gone to EAP for help before, and I've never went back after the first visit…because they were totally - I'm not faulting them, but they were totally useless for me…because in my session, basically they said, 'Yeah, I don't know anything about that. You should go see a good professional.'" (F21)		"So, when I called to talk to EAP, I think it was 2-3—no, it was longer than that—I think it was like 3-4 weeks before I could get in…and then when I did see that counsellor…she was traumatized by what I was telling her and I'm like okay, this did not go as planned. So, I never went back. I felt so bad for having done that. I thought it was a place where I could go and just let—" (PA3)		[Ottawa police have unlimited coverage for psychological services in their benefits] "The great thing with Ottawa Police right now is we have unlimited psych in our benefits, and the great thing about that is you can pick who you want to pick, right? And you should be able to pick which doctors." (P5)	

		"Social workers definitely have a place, but none of them were trained to deal with first responders. They're maybe trained to deal with a person going through a divorce, or whatever." (F21)		"In my experience, and I'm going to be blunt, EAP is a joke. You get three sessions. This is not a broken bone. You can't fix it right away. It takes time. It takes a relationship. Fixing something in three sessions is ridiculous." (PA7)		[Short appointments with family doctors limit people's ability to explore their mental health] "Today, doctors are regimented, so you have to go to…somebody else to talk about stuff, because your family doctors now have 15 minutes or whatever time they have and that's it." (P8)	
				"And even EAP, they don't have a clue. They're social workers. They're insurance people and when you start calling them with our kind of stuff, they're not interested in hearing that because last thing you want is here is something about an 8-month old dead baby floating in a bathtub. It's not the greatest call to be talking about." (PA13)			
				[EAP] "I won't refer anybody to that because the story I heard from that is they go there to speak about usually a bad call and the psychologists cry or are disgusted from our calls. And the last thing you need when you speak about a PTSD possibly call, is the person is supposed to help you to be disgusted or cry. So, I would never refer anybody for that if it's a bad call. Like if you're dealing with a divorce or some family thing, I think maybe. But again, you just get six or eight sessions a year...It's not that much." (P15)			
Social influences *Social influences (con't)*	**Stigma prevents people from speaking freely about their emotions**	"…there's two types of stigma, right? There's stigma of what people think, what you think people think of you. The biggest challenge really is the self-stigma." (F21)	9	"If it's something like a suicide attempt or a suicide ideation and things like that, that's still a huge stigma within our organization, especially because we deal with patients who have suicidal ideation pretty close to every shift…that's one thing I find there's a huge stigma regarding suicide. I think it's because we deal with so much of it and we're so I hate to say critical of our patients for when they don't succeed. It sounds awful, but we're like, you know, this is the fourth time I've picked you up. Haven't you figured out how to take enough pills yet?" (PA2)	5	"…but a lot of people are very hesitant to use the words mental health, or I feel, police officers, because the problem is when we deal with mental health, as a police officer, you're dealing with 3-5 per cent of the population that have had zero supports in their life that are usually heavily drug addicted and they turn to a life of crime and they have severe mental health problems that have never been addressed. And we deal with them as homeless and in shelters. And we get called, they're usually at their end of their rope and they are brandishing weapons and they're trying to hurt us, and so that's what is left as an impression of mental health on officer's minds that you're crazy and I'm not that person. And there is a big us and them type of thing." (P1)	8

	"I think that there's still a limit to the depth that we're pushing into the stigma. I think, you know, maybe we've scratched the scab off a little bit, but it's about getting in deeper sort of thing and we're not truly stigma-free until really everybody can stand up and seek the help when they need to seek the help." (F12)	"...you're talking to crews after, and then you talk about what you come in with...the banter back and forth is like, "Really, like with Google, couldn't you have figured out how to do it properly?"…then imagine if you were a paramedic in that room who has suicidal thoughts, you're really not going to open up to anything about that because we're making fun of people who can't complete suicide..." (PA2)	"Because there is such a negative social stigma, exponentially so with police because that's all we deal with is crazy people, I have been known to the use the expression "Don't get too close, you'll catch crazy." It's seen as a negative. And so, when someone has a problem, in order for them to reach out, you have to get over your pride before you can do anything." (P6)
	"I don't think I have. I haven't really asked someone. I don't know why? Like I said, maybe because there's still a stigma surrounding it that's not - you would ask someone if they blew their knee out, how their knee is doing, right?" (F26)	"I think there was always a stigma too, if you come forward or you have to go let's say on medication for something like an anxiety or depression. There's always that stigma like oh my God, they're taking meds for that." (PA3)	"…one of the greatest stumbling blocks from a police perspective is you don't want to be seen as weak, and so you take it all in and you actually feel alienated because you think you're the only one that feels like that." (P6)
	"We deal with our own problems, and people - especially the kind of old school, you just don't talk about stuff. You have a problem, you bottle it up, you shut up, and it will go away kind of thing. You just deal with it on your own, right? It's changing, for sure I notice even, I've only been on the job five years, and I notice it's changing, but there's - it's changing because it has to change. There's been some stuff that has happened, and people are starting to realize, okay, maybe there's something to all this mental health talk, right?" (F27)	"I think it's certainly getting better, but there is a generalized fear, whether that fear's based in reality or not, I don't know, but it's a generalized fear that people will judge you as weak, or not a competent medic, or dangerous to other patients. That's a huge factor." (PA7)	"There's a very historically strong police culture related to, you know, never showing weakness and, you know, being very stoic and always having to be in control." (P10)
Social influences (con't)			"You know, I'm off. I need sick leave. I need time. I need to whatever, but I'm afraid to go and ask for time off. Well, why is that? Well, it's because my supervisor has already made comments about so and so being off for "issues" or an operational issue or whatever because of a bad call. And so, they get that. That somehow this is maybe an operational stress injury that might need some support. Now it's also managerial stigma issue. Is it all inter-related? Well, you've got two separate issues here." (P11)
	"…it was almost as traumatic as the call that we went on, because you're basically being asked to strip naked in	"the stigma of all that. In the workplace, people making fun of it. Making fun of the whole scenario." (PA13)	"...somebody may see an application that's pretty good from somebody. Oh, isn't he the guy that, you know, for example, isn't he the guy that, you know, snapped? Do you know

	front of a bunch of people that you don't know." (F30)				what I mean? Without any of them knowing any information about that male or female officer that may have—you know, they just hear mental health injury, so they're nuts. It's still very simple, like officers are very aware, but internally it's still like oh God, we might have to deal with that. You know, that person might not be okay or cool. They won't be trusted because they may have mental health problems or something." (P14)	
Struggling with your mental health can be an isolating experience	"…they don't know who to talk to about it, and they feel isolated. They feel alone, and then that's where that social withdrawal comes into play and everything else like that. You realize you can't really talk to anybody about it, because you know that they can't relate or understand it." (F21)	5	"So, one of the most cathartic things that I experienced during my journey was multiple professionals saying no, this is normal. People go through this, or you're not alone. You're not the only one, and that really helps in terms of feeling like you're isolated and you're fighting this all on your own." (PA7)	2	"…I definitely see that when people are suffering, they feel very isolated, they feel very alone, they have no idea how they're ever going to get better and I've actually seen where they're just sitting in their basement smoking cigarettes and they're obviously not living any type of life…their marriage usually implodes, their kids hate them. They'll never come to work. It's like all these spinoffs, the ripples in the pond, right?" (P1)	4
	"…a lot of us, we're great with the people that we work with, our very - our work family, but I think a lot of us that are suffering, we don't deal well with crowds, so we - our house is a cocoon. It can be a gorgeous day out, but you're still inside, and you're just watching TV type of thing, right? Or you're - there's times where I basically get out of my bed, go down, grab something to eat, go on the couch, then go back up to bed. That's my day" (F30)		"I know looking back, hindsight's always 20/20, and as I went through my in-hospitalization, I realized that my depression spiraled down to the ultimate bottom and as one of the docs said, "Suicide is the ultimate form of avoidance" because depression you just go downhill and you avoid everything. You stay away from everyone, withdraw from everybody and that's what I did. I withdrew and to the point whereas he put it, suicide's the ultimate form of avoidance." (PA13)		"…one of the greatest stumbling blocks from a police perspective is you don't want to be seen as weak, and so you take it all in and you actually feel alienated because you think you're the only one that feels like that." (P6)	
People struggling with their mental health may be perceived as weak	"There could be platoon chiefs, some are very proactive and are very serious about mental health, and I know who those people are, and then there's other platoon chiefs that are old fashioned, "Suck it up buttercup." There's captains out there I know very well that are, "What are you a wimp?" There's still that mentality for sure." (F21)	6	"There's also the stigma of seeing me and my partner go to a call that's, you know, traumatic and the one person is completely fine, the other person is not. So, there's that stigma there of like well if I go off work because this really bothered me but that person doesn't, like do people think I'm weak? Do people think I'm weak? Do people think there's something wrong with me? Why can he deal with this or she? Like why can they deal with it and I can't? So, there's that stigma as well, but people take things in differently from life experiences. But not being aware of that, that's always	4	"…they [mental health problems] are very present, but they are also seen as a sign of weakness. So quite often, the people that I have worked with that have manifested with a mental illness, by the time it comes to light, it's advanced." (P6)	4

Social influences (con't)

				a big thing, especially because we've always worked in partnerships. Because if one partner's fine, the other isn't, there's that stigma of well, I don't see what the big deal is. The other person's fine and you're not. And that comes from peers, it comes from management, it comes from all levels, so it's not just that." (PA3)		
		"Whenever I come back from a call, with everybody in the room, not everybody's there, but they all make a joke about, "Oh, this guy's suffering this little bit, he should be stronger." There's always comments like that going on, and it makes you feel like, 'I'm not going to say anything, because he might make fun of me.'" (F35)		"I still think there's a significant contingent of paramedics who may not believe it, but they say and the little quips and the verbiage expresses a belief that if you suffer from mental stress, you're weak, and that you can't do your job." (PA7)		"I wouldn't ever want to show any kind of weakness or vulnerability at work. And if there was ever kind of a crazy call or a scary call or something that I was uncomfortable with…But there were times if I was insecure or feeling very, you know, out of my element, I'd never wanted to show any kind of weakness to that, so I would say that I would have definitely early in my career bottled things up, not shared. My vulnerabilities, not spoken about my emotions, never share that at work." (P10)
		"Obviously, people don't want to be pointed to be the one that you're weak. You don't want to be the weak link on your shift." (P36)		"…it's very hard to change the mentality to put your hand up and say, hey look. No, I need to stop here for a second. Medics look at it as a sign of weakness. Medics will ridicule it and make fun of it." (PA13)		"…the concern that officers might think that they have mental health problems, and they have a weak mind or they're not capable of doing their job is probably the number one fear." (P14)
				"Well for sure, as a woman, I feel like it's harder for us to cry or to ask for help because we're going to ultimately been seen weak or PMS'ing. I was told that before, like are you PMS'ing?" [I: From a male colleague?] "Yeah. But I just had somebody die. Like I feel like it's completely unrelated. So, I feel like as a woman, we have to look a bit harder than we are because they take advantage of us." (P15)		
Social influences (con't)	**Women in first responder sectors face social barriers that men do not**	"I think it's changing a little bit but there's still stigma around women being firefighters, and all that kind of stuff." (F36)	1	"Well for sure, as a woman, I feel like it's harder for us to cry or to ask for help because we're going to ultimately been seen weak or PMS'ing. I was told that before, like are you PMS'ing?" [I: From a male colleague?] "Yeah. But I just had somebody die. Like I feel like it's completely unrelated. So, I feel like as a woman, we have to look a bit harder than we are because they take advantage of us." (P15)	1	"And it's like you can't take things at heart. It's hard to take things at heart, but you know, we're women, right? So, guys have it so easy. They put on their pants and that's it, we're done for the day…Whereas for us, it's almost like a bit of a wave, you know a rollercoaster a little bit. So, it depends, too, what age you're at. You could be young and you're new and you're stupid. Then you could be in your 30s newlywed, bunch of kids. Oh, I can't work nights anymore because I've got kids. That's an issue at work. Then you have, and that's	2

							where we believe well why are you here? And then it goes into your 40s and then your menopause, and then oh boy. So yeah, so being that there's that many women, there's all those challenges all the way through" (P8)	
		/					"So, I think it was always the pressure of getting the work done because that was your role and that's your job, and that's what you're being paid to do and it's the right thing to do, but also not wanting to show any kind of weakness or vulnerability because I was a female officer in the traditionally big tough boys' role, you know, male role." (P10)	
Social/ professional role and identity	**First responders feel they have a duty to work, regardless of how they are feeling**	"So, you kind of do, question that and wonder it, but at the same time, too, you also know that somebody in another job was having a bad day. They're battling depression, say. And it's like things just are not good today, I can't make it into work. We don't have that option." (F12)	1	"…one of the things that I'm seeing is that people are dealing with their cup is full. They have no other resources left. They're just at the end of their rope and they still keep coming to work. And most of the reasons they're at the end of the rope is personal. Then they come to work and have something bad happen at work and that's it. Like that's literally the straw that broke the camel's back. And what I'm finding is a lot of people wait till that point to get help." (PA2)	3	/	/	
Social/ professional role and identity (con't)				"Make it or fake it, that's our world...My job on the road is to turn that off to do my job to the best of my abilities and not let those outside stressors and all those things get to me. And the only thing my partner ever made comment to was, "When things are going bad, 013 starts to get quiet." This job is solely, solely make it or fake it. And police and fire, exact same…All the emergency workers when it comes down to doing their job, they do their job to the best of their abilities, and they will make it or they'll fake it. But they will do their job...They just do it. We deal with the consequences after." (PA13)				
				"Even though I cannot provide care for the patient, I'm going to help my co-workers. My job is not to cry, like I'm here to help everybody." (PA15)				
				"Because we are helpers, so we don't like to ask for help." (PA15)				

	Many police officers view their career as a calling, which becomes a part of their personality	/	/	/	/	"We're the ones who go in and fix things. And the other thing, true police officers and true first responders, and I can't really speak for ambulance, fire, but I know for policing it's a calling and it's a career. It's not just a job, and it becomes part of your personality and becomes part of you. And that was like one of things when I first started going into therapy for PTSD was that's the first thing they said is normally, we tell our patients stay away from whatever caused the PTSD. Don't ever go back to it again for the risk of being re-traumatized, but you're a police officer. If I say that to you, then you can't be you anymore." (P5)	1
	The stigma of being seen by peers may prevent first responders from seeking care at a first responder mental health clinic	"Oh, I remember when this person was dealing with this, and they said to me, 'Oh, I don't want to go to a clinic, because I don't want anyone knowing that I'm dealing with something, right.'" (F26)	7	"I think take away all the uncertainty. Take away everything they could be uncertain about. Am I going to meet somebody I know? That's a big one, like am I going to meet somebody I know? Like you say, no, it's a private waiting room. Basically, if you can give them enough upfront information that doesn't overwhelm them...like there's 15 minutes between appointments so you're not going to run into anyone. It's not a general waiting room. You will see a person when you arrive." (PA2)	3	"…so, I've made the decision. I'm going to seek help. One of the worst things I can think of is somebody's going to see me. If you were to schedule people in such a way so that they never meet there's an in-door and an out door. So, I walk in through the front. I'm immediately shuffled back to where I'm going to be meeting with my mental health professional. I have my meeting and then they show me the back door." (P6)	7
		"The only other thing that I would kind of worry about is…if you had a clinic that was in a centralized location, and it was specifically for first responders, I would worry about there being overlap, right? One guy coming out the door, and another guy going, "Well, hey," because everyone knows each other, right?" (F27)		"I think that a lot of times when people come to this type of clinic or they seek this type of help, anonymity is very important to them at that moment. At least speaking from my experience, it's a very vulnerable moment. So, seeing somebody that they know or have a professional relationship with or even a social relationship with, can actually scare them away, or would scare them away." (PA7)		"If you put it in with a lot of other facilities, that's not a bad thing. It increases the anonymity of the reasons why officers or members may want to go there. So, it's not necessarily identified that oh, so and so is walking to this one lone house or building and that's the OSI Clinic and everybody goes. So, you start doing that. If you have a standalone, then it's very easily the confidentiality goes down, the level of it goes down." (P11)	
Social/ professional role and identity (con't)		"…I'm using the word covert. As crazy as that sounds, like I said, you can't drive to Ben Franklin Place in a city building, walk through a public parking lot, sit in a waiting room with a glass wall, with 10 chairs, and then, I don't know, your colleagues walk in. I don't know how you set that up, and whether you're feeding into the stereotype or whatever else, that		"I think having a waiting room filled with your colleagues can be very traumatizing. When you're stressed or you, I think, yeah, the idea of just having people sit there waiting for their next appointment or whatever, if I saw a whole bunch of peers in there, I would get extremely nervous, self-conscious and I would want to leave." (PA7)		"…the concern that officers might think that they have mental health problems, and they have a weak mind or they're not capable of doing their job is probably the number one fear. It's really not so much about accessing them. It's about giving showing any signs or raising any flags that you are accessing them. So not so much the accessing of them, it's the exposure of you accessing them to other	

		doesn't matter at this point. We have to keep this now as it starts to open up very, very private. I think you will get more people reaching out if they know…the physical environment is discreet. That you can go in and out, and no one knows you were ever there." (F31)				members of the public and to your colleagues." (P14)	
				"I think that part of the interview on the phone might be a thing to ask is: are you comfortable coming into the waiting room? There may be other colleagues, other services there. If not, please tell us and then there's a different door entry…Like you're going to 112 and if you're not comfortable going into the waiting area, then you're going to go to 125 and get buzzed in the back way." (PA13)			
Knowledge	**First responders can often notice warning signs in their colleagues when they are struggling with their mental health**	"Obviously, you know everyone to be a certain way most of the time, so I think if you notice a change in behaviour, that's a big indicator." (F29)	8	"So, someone that once came to work that was happy-go-lucky now comes into work never smiling. We have times where we can have social interaction…and people are chitchatting and joking. If they were once involved with that then they're kind of not participating in that kind of thing anymore, just being sort of short or short-tempered with like communication with their coworkers. Then they can also start running into problems with department issues, like not finishing their paperwork on time, not leaving the scene in the 20 minutes that we're supposed to. Yeah, it's a lot of the behavioural things. If it was something that was once onboard with healthy eating, packing their lunches, now it's just like eating junk constantly, stopping for McDonald's, stopping for this, so their diets can change as well." (PA3)	5	"Yes, but I don't think you need any training for that…everyone will say in retrospect, "Oh yeah, they were acting a little weird. Why didn't? Why didn't?" Well, what we're saying is if they're acting weird, you're the first person to know that, the people that are close to you, the people they can't hide it from." (P5)	7
Knowledge (con't)		"It's only - and when other people look at you, they see those changes, but yet they don't know what it is, because they're not educated…which is one of my things that I'm trying to develop for families right now. How it kind of presents itself. It's presents		"One of the main things I look for is attendance is a big indicator. Mood, so irritability; isolation is a huge thing. So, somebody stops coming out and somebody stops doing the things that they enjoy. Fear, people expressing fear. Almost fear to go to		"I'm quite aware of the symptoms of mental illness, sort of how it presents itself sort of day to day, and the anger, the withdrawing from family and friends outside of policing and sort of latching onto the police family instead and kind of withdrawing from outside of work, drinking, you know, your common overuse is	

		itself as somebody isolating themselves socially, locking themselves up in the basement…doing whatever. It can present itself as anger. It can present itself as irritation. It can present itself as addictions, and yet the person might not even realize what's going on. I've heard that from so many different people who have gone through this firsthand, and including myself. I didn't realize I was irritated, or irritable, or whatever……or angry, or judgmental, judgement." (F21)		work. Fear of making a mistake, just expressing very fearful sentiments, I guess. Affected home life, home relationships, so my colleagues takes me aside and starts talking about how home life has been affected is a big sign; poor memory, apathy." (PA7)		alcohol, spending money, you know, not getting enough sleep or time with your family, you know, sort of like an unbalance, I guess, would be more. Like those are very common symptoms of stress or, you know, coping or inability to cope that sort of thing, being withdrawn, angry, that sort of thing. So, I definitely can say that now that I've had training in recognizing it, it stands out to me very clearly, you know, and I see someone who comes in with a big rant about something ridiculous that people shouldn't rant about, you know? Like people who come to work and they're so pissed off or angry because they've been stuck in traffic, you know? And it's kind of like well, maybe there's your chance to listen to a pod cast or listen to the radio, but they're just like raging over something that is really not rageable or shouldn't be, shouldn't put someone into such a stress level. So, I think as an adult, I'm very aware of that and I recognize that in hindsight, in myself years ago when I was stressed and I didn't see it that way, right? So, it's kind of not recognizing the forest for the trees until you're out of it and you're like oh my God, that was totally me, 10 years ago, you know?" (P10)	
		"You work with each other, your brothers, your sisters, you know each other better than anyone. If in a week from now, or a week and a half, two weeks from now the person still isn't kind of coming back to their norm, it's an indicator. You still see it going on after another week, maybe there's something there." (F12)		"…I always go to work with the same person unless my partner is sick or off on vacation. So, we really become close to each other to a point sometimes that we joke that we see that partner more than our spouse, so like we know that person. I know if my partner is not well…" (PA15)		"A police officer, who had five years on the job or more, and I will say this with confidence and I've had other emergency doctors say that police officers, we become very, very skilled at doing mental health assessments on people, more so than maybe even physicians are at the early stages after we get a bit of experience because we're out there on the streets." (P14)	
Knowledge (con't)	**Paramedics know how to hide mental health symptoms**	/	/	"I think one of the biggest challenges I've had is the comorbidity in terms of mental health with addictions, because I find our colleagues are better at hiding the addictions aspect of it than maybe the anxiety, the depression, the other stuff…I find that's been the biggest surprise to me is people that I know are dealing with one thing, I then find out are dealing with an addiction as well. And a lot of times because they don't, I find the addiction has blindsided me in the past that	3	/	/

			there's this going on as well, and it's been surprising." (PA2)				
			"…in our profession, people hide it really well because I mean, we pick up people with mental health issues and they hide it well because they don't want to be seen as someone that's schizophrenic or, you know, shouting and yelling and hitting and that kind of stuff. So, I feel like our profession hides it well and we don't want people to know." (PA3)				
			"As one of my friends put it, you were the ultimate form of make it or fake it philosophy. She says I wouldn't have believed it until I saw her. She heard it through the grapevine, but she wouldn't believe it until she saw me." (PA13)				
Knowledge (con't)	**Peer support work provides a base knowledge of mental health, which can be built upon with experience**	"…I've gone through a couple of sessions through OFS....Yeah, the training is really good, and you learn more and more. I would say I'm adequately trained, and I think you learn more as you go along." (F29)	4	"I'm not a mental health professional, but I've had additional training and I've been doing my role for five years...so I've had lots of hands-on experience." (PA2)	2	"I've taken the Mental Health First Aid. I am an R2MR instructor which deals with all sorts of mental health issues in all, I think the Commission [Mental Health Commission of Canada] calls it "The Working Mind" now…the military calls it the "Road to Mental Readiness", so I deal with that…attended the Canadian and mental health veterans…I've presented lots. I think after two years, I feel—and I don't diagnose anybody because what the hell do I know? But I feel that I have a greater grasp on okay, how serious is this issue that we're dealing with…I feel I have a grasp of that. But when I first started this job two years ago, I would say it was limited and I was definitely questioning why they hired me because I'm not a psychologist. I have a couple of courses at university level in psychology…It's like I didn't feel that I was confident in. Well, it's a start, right? It's a finger in the dike as the whole dam is exploding around you. That's basically how it feels like at times, but anyway. [I: You mentioned that you can recognize more of the serious cases.] Yeah." (P1)	1
		"Basically, most of my formal training has been through peer support, and there's been some mental health - a program they ran through the fire service, Road to Mental Readiness…" (F31)		"So, we've received CISM based training (Critical Incident Stress Management). I've done SafeTalk. I've done ASIST. I think that's it for me, just going to different conferences… information sessions.			

				We've done a few at the Royal Ottawa on PTSD…So I feel like I could try - if someone's showing the signs, the typical signs that are discussed, then yes, I think I can recognize it and then refer them to where they need to go." (PA3)			
	It is important for clinicians to have knowledge of the culture and working environment of first responders	"We have, and I think EMS and police have similar type things, but we have what we call Fire Ops 101 and basically it typically was developed to media, politicians that sort of stuff. It's grassroots, that sort of things, bring them in and show them what it's really like. We put them in the bunker gear, you know, we take them into the burn building and they get to put out a mock car fire, but they get to feel what the heats like…" (F12)	9	"...learning the lingo, it would be great, too, if they were able to come for some ride-outs in our workplace to see like what we face every day, either the challenges of the calls or just challenges of shift work, challenges of not eating, challenging just the constant go, go, go, not being able to finish paperwork. So, having that firsthand experience to be like oh yeah, I know what they're talking about now." (PA3)	2	"The big approach is the exposure…It doesn't have to just be on the road. It could be, you know, you guys are going to come down and they're going to run you through our use of force day, and so you get to do the scenarios and you get to do the decision-making scenarios where it's are you going to shoot or are you not going to shoot?...The decision-making made under duress and say like, "Okay, I get that." I was really scared because you've never been exposed to it and I shot that guy because I was scared. Well, he was just drinking a bottle of wine on a corner and you shot him." (P4)	8
Knowledge (con't)		"I think they should be aware of the culture…whether it's fire culture, police culture, paramedic culture. They all have their different cultures. Just because we're all first responders, does not mean we're all the same culture…it can be completely different for sure. They have to be A) aware of the culture, B) they've got to be aware of the language that we use.…and what kind of stress that first responders are under in their respective fields, police, fire, paramedics, because they definitely have…different causes of the stresses, put it that way." (F21)		"…one of the things that attracts me to the idea of this program…is that you'll have people who, I guess they really deal with a lot of first responders and the types of problems that we have, so they become more proficient in it. So, you don't have to do catch up all the time, you know, I can explain this particular aspect of my job and they'll know what I'm talking about right away. And I know that takes time, but that's really good. That's huge." (PA7)		"You're looking at some pictures and a video, and you can't even stomach it. How are you supposed to treat these people who have been through it firsthand and offer some compassion and understanding?" (P5)	
		"Then, those clinicians talk to each other, and they share their experiences. "Wow. Okay, that makes sense." They'll start speaking their language. "I saw this, and I saw this. This team I spent the day with told me this, and this police officer I spent the day with told me this, and these two paramedics I spent the day with told me this." Now, all these clinicians are going to have a much better understanding…" (F25)				"Ride-a-longs. Come and work with us. Come and sit at our desks and say oh my God, you do this?" (P8)	

		"I think the best way to kind of get around that is find clinicians that have dealt with these types of patients before, and it's not just police, fire, EMS, if they've worked with hospital staff, like nurses, doctors, if they've worked with military. Military is very close to what we do in a lot of ways like that, right?" (F27)				"Be immersed in these things for a week or two at a time, you know, almost like a work placement. But you've got to get a sense of like certain things and hear conversations and ask questions and stuff, you know? It's the only way, through experience is to understand some things, to experience it to the total." (P14)	
		"…you definitely need providers that have spoken to military, first responders, who understand the kind of pressures that we deal with on most days." (F27)				"Are they attending training days? Do they have some knowledge as to the basic stressors of the job? I don't know what kind of doctors they may be, or medical professionals or whatever you want to call for support they are or have their training, but if you don't know what night shift's like, that takes a lot away from you. It's not an end-all be-all, however developing that credibility is vital." (P11)	
	First responders are good at responding to the initial traumatic event, but not the long-term consequences	/	/	"You just turn it [emotions] off and you've got a job to do and you do her and get her done. Unfortunately, when I realized it was too late was that switch became stuck in my off position and it took me a long time to get it unstuck to get to the point where I could sit with a feeling or an emotion, process it, figure out what I wanted to do..." (PA13)	2	"And we often ignore the snowball effect of a traumatic event. We're great at responding to the initial incident and the people right there, but even just take first responders aside. Well, who is supporting the children and husband of that woman who lost her legs? Who is supporting the wife and kids of the first responder who first dealt with that woman who lost her legs?" (P5)	1
				"I wasn't aware that I was sick until I was deep. And only when I hit what I would call rock bottom, did I seek help and then I started noticing. It's amazing how - at least in my situation - I could delude myself, or just kind of tread water. And it's only in hindsight, so I have significant amount of respect for the ability to be unhealthy and not know it." (PA7)			
Emotion	**Emotional and physical impacts of stress and trauma (i.e., physical manifestations – poor sleep, decreased energy, etc.)**	"If you're dealing with a stressful incident, and you're having trouble sleeping, then obviously it impacts your job both mentally and physically, your personal life, your relationship, whether it's with a partner or your friends, family. Just feeling maybe lazier, tired, you're - most - a lot of first responders are usually physically active people, and so maybe they don't want to work out as much, whatever." (F29)	8	"It's affected my ability to treat patients properly. It's affected my ability to be professional. It's affected my ability to show up for work consistently. It has significantly affected me in every single facet. Physically, being a paramedic is a very physical job…Being affected mentally, with my mental health, it affects sleep, it affects strength, affects the ability to exercise and take	2	"I guess I recognized it, but I thought I could manage it, and it wasn't happening until it was a very quick drop into ill health: depression, insomnia, increased alcohol. And at that point, I was operational at the time, and I knew I could not, you know, I was barely making it through day shifts, not sleeping. And so, for me, I pulled myself off the road. I went and saw a psychologist…" (P11)	7

				care of myself, so literally every facet." (PA7)			
		"It can present itself as anger. It can present itself as irritation. It can present itself as addictions, and yet the person might not even realize what's going on. I've heard that from so many different people who have gone through this firsthand, and including myself. I didn't realize I was irritated, or irritable, or whatever…" (F21)		"Like until I started my treatment, hearing a call like my child in the first, it was a hanging. So, every time I would hear a hanging call, I was physically sick to my stomach." (PA15)		"This affects sleep. It affects alertness, irritability, compassion, empathy. I mentioned fatigue and ethics, sleep, so it increases your fatigue, ability to interact as far as socially, isolation through the roof…I'm throwing my responses in with many others that I know are dealing with the same thing…what I know what I've experienced from all elements. Everything from you start to throw in chemicals into the mix with regard to psychological drugs: psychiatric medications, antidepressants, then you impact again, on top of the original sleep, more sleep issues: drowsiness, work functionality and alertness at work, dependence issues on them, sex drive, intimacy…desire just to even be open to people because you're so fatigued." (P11)	
Beliefs about consequences	**Involving spouses or family at the right time in mental health treatment can have beneficial outcomes**	"Right off the bat, I wouldn't suggest because ideally, there'll be things opened up that haven't even been opened up at home yet, and there may be vulnerability to that, especially depending on the dynamics in the house. You don't know, but that would be definitely something that would be a few visits in, I think would have huge benefit for sure." (F12)	10	"…if you're going to be trying to help someone better themselves, it's hard to do if they don't have the support of the family. So, if someone were to leave the clinic and say I've got this great news from my psychologist or I'm on this new med…and they come home and say well that's a stupid idea...They've just kind of undone everything that that mental health professional has tried to do. So, there needs to be maybe an education piece...like why we're doing CBT or why we're doing this or how to support your person while going through this." (PA3)	5	"It is the all-encompassing. I know that what affects the individual will affect their family, and we have those ripples in the water." (P1)	6
Beliefs about consequences (cont'd)		"So, I think where a family can be involved, I think it's really important. I think it's the partner or the spouse that can keep people honest during treatment and going through a treatment protocol. There's accountability there." (F12)		"…when people are actually at the point of feeling comfortable with what's going on, offering group things. Maybe offering things to that you can bring in your spouse and kids. So, like having maybe a family session one time. I think another important thing might be at the clinic, too, is having like where you could bring your kids in let's say and there's a child psychologist that could just kind of help kids understand like what mommy's and daddy's do, like shift work and sometimes they might see bad things and they may be upset but			

			it's not at you. So just having those kinds of things, too, because I think that's a big thing as well is just kids." (PA3)
		"I don't know if I'd be here if it wasn't for my family. If I'm going to be perfectly honest, that's what kept me going, and I know so many guys who have lost their wives, their marriages over this and everything else, and those are the guys who struggle more than anybody, because they're alone. They're alone with their thoughts. They don't have the support network. They don't have a hug when they need a hug…Have their parents, have their spouses, bring your best friend in, okay, and then we're going to spend the day talking about mental health, and we're going to - not only are you going to learn about it, but the people who are going to be a part of your life are going to learn about it, because they're going be the people who are going to influence change in you." (F34)	"Paramedic: I think in two different ways, one being that you could bring them into specific sessions, and then also having just information sessions is really valuable. Just speaking through my experience, when I went away for treatments, they offered a 2-day course for my spouse to go, where they explained basically PTSD. They broke it down and they explained what to look for, typical behaviours, that type of stuff and she felt she could relate better, she felt more empowered. And my ability to talk to her about it greatly improved." (PA7)
Beliefs about consequences (cont'd)			"I think there's a place for families in the thing. I think once you understand, and once that person has gotten the help, and they want to bring the family in to help relay what's going on, to help without making it their problem, too...We want to make sure that whatever I'm going through doesn't get transferred to the family, right? But on the other hand, the family needs to know what I'm going through to understand why I'm making these decisions or why it's gone this way." (PA13)
			"I think it should be an option for the family member to understand what PTSD is, or to understand what fatigue of compassion is, or to maybe give tips on how to deal with that, because I know it's creating a lot of divorce or like difficult family relationships." (PA15)

Note. F = Firefighter; PA = Paramedic; P = Police Officer

Chapter 5: CFIR Results

The following section detailing the CFIR results are formatted as a chapter rather than a manuscript. The CFIR results will be submitted to an academic peer-reviewed journal at a later date.

5.1. Participants

Overall, 11 paramedics (eight men and three women) from the Ottawa Paramedic Service and CUPE 503 engaged in the TDF and CFIR semi-structured qualitative interviews (Table 4). In accordance with Statistics Canada guidelines, participants were provided with the following options to best identify their gender: male, female, non-binary/third gender, prefer not to say, or prefer to self-describe. All participants within the study self-identified as either male or female. To moderate sampling limitations, recruitment actively included 60% frontline female paramedics in the TDF interviews. Participants in the TDF and CFIR interviews ranged in age from 28 to 61 with a mean age of 46.1 years (*SD*=9.9 years). 45.5% of the sample completed the TDF interview (n=5), while 54.5% completed the CFIR interview (n=6). Primary sub-group classifications included: 1) sought treatment for a mental health disorder (n=3, 27.3%), 2) peer support member (n=2, 18.2%), 3) mid-level and senior management (n=5, 45.5%), and 4) union representative (n=1, 9.1%). The sample reflects paramedics who reported being supportive of and open to discussing mental health and mental health care.

Table 4. Demographic Characteristics of TDF and CFIR Paramedic Participants

Variable	Total (n=11)		TDF Interviews (n=5)		CFIR Interviews (n=6)	
Mean Age, Years (SD)	46.1 (9.9)		40.4 (9.8)		50.8 (7.9)	
	N	*%*	*N*	*%*	*N*	*%*
Gender						
Men	8	72.7	2	40.0	6	100.0
Women	3	27.3	3	60.0	0	0.0
Primary Sub-Group						
Sought treatment for a mental health disorder*	3	27.3	3	60.0	/	/
Peer Support Member*	2	18.2	2	40.0	/	/
Mid-level and Senior Management	5	45.5	/	/	5	83.3
Union Representative	1	9.1	/	/	1	16.7
WSIB Case Worker or Manager	0	0.0	/	/	0	0.0

**All participants in the TDF interview were frontline paramedics. Only primary sub-group classifications are listed in the table above.*

5.2. Data Saturation

Data analysis revealed that data saturation was reached within the 11 interviews when there were no new barriers or facilitators produced on help-seeking and accessing mental health care producing no new themes, findings, concepts, or problems (Guest et al., 2006).

5.3. Consolidated Framework for Implementation Research Results

A total of six CFIR interviews were conducted, during which participants openly shared their opinions about internal and external factors influencing the feasibility and long-term sustainability of the clinic. Participants included six paramedics (six men) employed by the Ottawa Paramedic Service (n=6), including one member who is also a representative of CUPE 503, as illustrated in Table 5. Participants ranged in age from 38 to 61 with a mean age of 50.8 years (*SD*=7.9 years). Sub-group classifications included members in mid-level management (n=2, 33.3% - Superintendent rank), senior management (n=3, 50.0% - Commander, Deputy Chief, and Chief ranks), and CUPE 503 (n=1, 16.7%).

Table 5. Demographic Characteristics of CFIR Participants

Variable	CFIR Interviews (n=6)	
Mean Age, Years (SD)	50.8 (7.9)	
	N	*%*
Gender		
Men	6	100.0
Women	0	0.0
Primary Sub-Group		
Mid-level and Senior Management	5	83.3
Union Representative	1	16.7
WSIB Case Manager or Manager	0	0.0

A total of 27 CFIR constructs were included in the analysis, as illustrated in Appendix J. While the presentation of the findings by CFIR domains was considered, the thematic analysis indicated that domains and constructs overlapped. The complexity of both the clinic's implementation and the implementation process obfuscated the separation of key findings by domain.

The CFIR results are organized into the following 11 themes that reflect participants' opinions regarding the clinic informed by the CFIR framework:

1) The clinic fills a gap to meet paramedic mental health needs;

2) Buy-in and support from key leaders;

3) Internal support and receptivity to change;

4) Benefits of organizational stability;

5) Access to care within the service;

6) Clinic's role in decreasing stigma and barriers to care;

7) Adaptations to increase feasibility and long-term sustainability;

8) Communication and engagement strategies;

9) Importance of evidence-based practices and cultural competency;

10) Costs and potential consequences of funding and not funding the clinic; and

11) External influences of feasibility and long-term sustainability.

Illustrative examples of participants' quotes verbatim, arranged both thematically and by CFIR domains and constructs are included in Appendix J. The necessity of meeting paramedics' mental health needs is the central theme connecting all other themes in this analysis. The remaining themes focus on how to best go about operationalizing meeting paramedic mental health needs.

5.2.1. Theme 1: The clinic fills a gap to meet paramedic mental health needs

Addressing the needs of paramedics extended across several CFIR domains including *Intervention Characteristics* (*Relative Advantage*), *Outer Setting* (*Patient Needs and Resources*), *Inner Setting* (*Tension for Change* and *Implementation Climate*), and *Characteristics of Individuals* (*Knowledge and Beliefs About the Intervention*) which highlighted the compatibility of the intervention within the Ottawa Paramedic Service. The implementation of the clinic was consistently viewed as a way to fill the existing gap for the provision of mental health services. Participants acknowledged the intolerability of the current state of paramedic mental health and the need for culturally competent services while underscoring their support for the clinic and describing the tension for change across all ranks within the paramedic service. Participants discussed senior management's awareness of paramedic service members' mental health needs and their support and acknowledgement of the necessity of implementing the clinic to combat the intolerability of the current state of paramedic mental health. Participants also foresaw the clinic's implementation as a way to augment existing internal resources, which include the Peer Support Team and the City of Ottawa's Employee Assistance Program (EAP). The Peer Support Team is geared towards providing initial support to members after critical incidents. In addition, the Peer Support Team provides support in response to other stressors encountered in the workplace; other peer support led resources include providing mental health education and promoting wellness in

the workplace. The EAP program provides up to six sessions per year to all employees of the City of Ottawa. Therefore, the program offers a short-term resource that is not tailored to paramedics' needs or other first responder sectors (i.e., police or fire). Neither peer support nor EAP are set up to provide long-term support, nor are they equipped or trained to provide clinical care. Participants envisioned that the clinic would fill this gap by providing timely and comprehensive mental health care for paramedics.

> *"Peer support is strictly…an initial touch point…much more around education, promoting wellness at the workplace…It's not trying to be long-term therapy. It's just trying to give people that initial support and a hearing if they want to talk about stuff. Usually, kind of when issues are coming up or…as soon as possible after the point of exposure as opposed to the longer term…some of them [peer supporters] do follow people longer term to give them support. The EAP really is – gets you one or two visits, and it's really to tide you over until you can get longer-term support. The clinic I see as more definitive care. It's getting you in…" (P017)*

> *"Oh yeah. The Peer Support people and the dog [Max, a certified therapy dog] aren't meeting the demand, and depending on who you are—typically, I'd say the older demographic, it's not enough…Do you think a 50-year-old guy is going to go in to speak to a 25-year-old Peer Support person and tell them all about your problems? Unlikely, so that's not the Peer Support person's fault. I think the creation of these things has been awesome...I think we've realized through that there's still a greater demand for I don't want to say real help, but professional help." (P019)*

Participants foresaw the service benefiting from numerous advantages associated with the clinic's launch, which speaks to the current implementation climate and tension for change (*Inner Setting*) within the service, and participants' knowledge and beliefs about the intervention (*Characteristics of Individuals*). These competitive advantages included: 1) providing the paramedic service with resources to better equip their members with the right tools to approach their mental health. This also provided an indication of the level of awareness of mid-level and senior command regarding the needs of paramedics. As described by one member of senior management, the leadership team approaches the topic of mental health by filling the proverbial "toolbox" to equip members with every available tool to access should they require it.

> *"It's good that it's going to be specific for these people. Well, our hope is that it will be timelier than our EAP or private care. So, if those are true then those are advantages...The more resources we make available, this is not the only thing that's going to be available to staff so look at it as another resource that will be dependent, I guess, on the individual and case by case, whether it's going to be something that they should participate in or are they going to go down a different path..." (P016)*

2) Anticipated cost savings were noted as a beneficial consequence of implementing the clinic. Potential cost savings resulting from reduced absenteeism and having members return to work faster once they have access to timely and evidence-based mental health care would likely decrease sick time and WSIB costs. Participants also suggested that the service could derive potential additional cost savings from adopting a proactive approach towards mental health by increasing internal education sessions to encourage help-seeking behaviour and access to care amongst members before reaching a crisis point. 3) Facilitating members with navigating career transitions into new roles within the City of Ottawa was cited as an opportunity to provide supports for members where none currently exist. Members who cannot return to work in their previous capacity and have remaining years of service before retirement are left to navigate the process independently within the WSIB mandated two-year window. Participants viewed assisting members with these important life transitions as a much-needed service that the clinic would be well suited for. Determining how best to support members moving through this transitionary period and reconciling the change in their identity as a frontline responder (i.e., paramedic, communications officer), or as one participant described it, "de-paramedicizing people" would be of significant benefit to members.

> *"One whole stream of the operational stress clinic's function may turn out to be helping staff manage that transition [to new roles]…you've got two years with WSIB basically to figure out sink or swim or go back or find a spot…finding a spot also in the city [City of Ottawa] was basically, "Well, there's lots of jobs out there. We can try to find you things." You've got to navigate. A lot of it was they have to navigate themselves. If it takes two years for them just to get their head around the idea they can't put on the uniform, they've got to take off the uniform, and then they get their head around that they've got to be priority*

> *placed. You've already lost two years. The window of opportunity then is really narrow, and then it may vanish. You don't want to see people written off, so if the clinic can help with that…a whole side benefit of the clinic is working with people's transition to getting your head around how do you move to bylaw, and then, how do you switch from being in paramedic mode or com officer mode to being a clerk or being a meter reader or being not a frontline responder?...how do you switch when you can't do that and that's how you define yourself…the core of your identity…They're so wired into the role and the capacity, it's really hard for them to change gears in the civilian world…that mental journey seemed to be the bigger barrier." (P017)*

Supporting the clinic's implementation and sustainability would also provide the paramedic service with a competitive advantage over other municipalities, for instance, in the recruitment of new staff and providing the service with the support to help members remain on the road throughout their career. As highlighted by a member of senior command, leadership's buy-in and support of the clinic signals to the paramedic service and externally that they are investing in their members and new hires, making the service a leader within the paramedic community in Canada.

> *"...we know that we're one of the only ones in Canada. I'm on several committees that meet with Eastern Chiefs and Deputy Chiefs, and we give updates in regards to what's going on in our organization, and certainly mental health is a big topic…I think they know number one that we're trying to be a leader in Canada…from a service perspective of our employees, and we link it right back to our service model of that full time model that we're investing in staff…our whole model actually is around keeping that paramedic on the road, giving great patient care for the whole career. It's an easy statement to put. It's very hard to deliver it, and the clinic from that competitive advantage, if I'm talking to other paramedic services, and I think they clearly see that if we're investing in staff, and their own staff members, new hires are coming out of colleges, all those aspects is how do paramedic service...delivering actually on that…And so that's that lead by example piece, so I know [the] Chief certainly gets lots of inquiries in regards to what are we doing for mental health." (P022)*

The support of the implementation and sustainability of the clinic also signals the service's understanding of the impact and value of research to better address their members' needs, setting them apart from other services outside of the City of Ottawa (*Intervention Characteristics*, *Inner Setting*, and *Characteristics of Individuals*).

> *"...that competitive advantage piece there, I think that's where we're at, is we value research. We are a very research driven organization. We are engaged with partners like yourself, because we know we can't just do it within, as there's expertise outside. I think the other services certainly recognize that, because they come knocking on the door, and said, "What are you doing next?" or "How did you do that, as that first step?" (P022)*

5.2.2. Theme 2: Buy-in and support from key leaders

Buy-in and support from key formal and informal leaders within the service were identified as crucial for the success of the clinic's implementation and its long-term sustainability, which are influenced by the CFIR's *Inner Setting* (*Leadership Engagement*) and *Process* (*Opinion Leaders*, *Key Stakeholders*, and *Champions*) domains. Participants commented relatively positively regarding past instances of authentic engagement and buy-in from senior leaders towards mental health. Participants in senior management positions perceived their awareness of members' needs to be relatively high. These participants noted that the potential to increase awareness might not be suitable given restrictions pertaining to confidentiality and the need to maintain a separation between the employer, specifically regarding employee personal health information.

The paramedic service's specific structural characteristics were reported to facilitate increased interactions between management and the broader service. The organization has one central headquarters rather than being dispersed across multiple locations in the City of Ottawa. As reported by a participant in senior command, all employees begin and end their shifts at headquarters, which provides opportunities for daily interactions between members in management positions and all employees, noting that this was a key consideration when planning the newly constructed headquarters.

> *"Yeah, we're pretty aware…I don't know what more aware would look like. We're an employer. We have a limited right to know about things. People tell us things. We try to help them. We know that people are asking for help…we provide the help that we can in as anonymous manner as we can. So, as the employer, we know about absenteeism and we know why people are absent—why they tell us they're absent and we track that. Plus, we are from a service perspective the lines of communication in this organization specifically*

are not only open but available, contrasted with other Paramedic Services and police and fire...The specifics are that everybody starts and stops their shift in this building, in the Paramedic Services. That's not true in either police or fire in the City of Ottawa...So, that leads to daily contact between the organization and the employees, which is helpful. I mean the supervisor sees every staff member every shift." (P016)

Participants also credited the Peer Support Team's leaders for improving communication pathways and better informing mid and senior management of service members' mental health needs and systemic issues reported by frontline members. The clinic was highlighted as another valuable resource, in addition to EAP, through which to obtain information and increase awareness regarding systemic issues impacting mental health, barriers to care, and opportunities for improvement within the service.

"I think the service is probably – I would like to think they're fairly high – aware of the needs of paramedic staff – because it's not just paramedics because they have such a good working relationship with peer support, the peer support leads have regular opportunity to bring issues up, not only individuals, but about how things are going and…systemic kind of pressures they see, and things that are coming up from staff, but kind of in a generic way to talk about those issues and what they see the needs are and what their pressures are, so that they can bring those needs forward. The EAP also does the same – has the same kind of a capacity report...here's kind of the issues that are coming to us that you may be able to address through other workplace things. I think the service probably has a good idea, and…that clinic [will] have their finger on the pulse of kind of how the staff are doing, plus…we have our staff management software schedule and software and other stuff that helps track attendance and things…you don't know exactly why people are off, but at least you can look at the whole global pictures of workplace illness and injury and things like that, and the impacts which, again is a good global tool to help follow what's occurring." (P017)

The level of awareness and understanding of paramedics' mental health by mid-level and senior command was reported by participants from the union and mid-level management, who discussed the variability amongst members in supervisory roles. Some members were well aware and attuned to their staff's needs, while it was reported that others are oblivious.

"Vary greatly. I think there are some people who are well aware, well-tuned in. They will notice when their staff are off-balance. They will notice if something has changed and they might just decide to reach out…And there's other people who can be clueless. Like somebody could say to their supervisor 'I'm going to go jump off a bridge' and they thought

well, whatever. So, there is a great degree of variation in the understanding of the staff needs." (P009)

Several participants reported distrust of the employer as a significant barrier to care, primarily due to the long-lasting impacts of poor leadership of past members of the senior command. Participants reiterated that the Chief of the paramedic service sets the tone for the organization. The recent change in leadership and new management structure was credited for improving the culture of distrust among newer members of the service. Employees with more than ten years of service were reportedly still struggling with trusting the current leadership team's authentic support of mental health due to the long-lasting impacts of the past members of the Executive leadership's actions and attitudes.

"...the level of distrust with this employer by people who have been there longer is high. We've had a new management structure…bad bosses go, and a new boss comes in and he's good. So, the current one [Chief] is better. So, if you're a kid paramedic, a rookie and you had any interactions with that—because they set the tone, right? The guy at the top sets the tone…if you're feeling that you're supported right now and stuff like this, that's what they want. But the people who've already been there 10, 12, 15 years, it's hard to trust a new guy when the old guy was mean, really mean. At one point this person, years ago, said we just want your best five years. Said that to staff right to our faces: give your best five years. Thanks a lot. And going back to the not having transferable skills, what else am I going to do with my life? I'm 35 or 40, what else am I going to do? Okay, my best five years. Now I'm burnt out. I've got psychological issues. I've got depression, whatever. Like thank you. I gave you my best five years and now what? I don't have a solution...He hurt a lot of people by that—things like that. Not just that comment one time, but his attitude all the time...he was the [position redacted – past member of Executive leadership]. Mean, mean guy…so those people that still have a distrust...they were there during that time..." (P019)

Another means of combatting distrust of the employer and disseminating information about the clinic included appointing champions within the service. Partnering with well-respected informal leaders was reported to be influential in facilitating members' engagement in accessing care within the clinic. The inclusion of these key stakeholders in different stages of the planning, development, and implementation of the clinic would further reinforce the authenticity of buy-in and support

from formal and informal leaders. This further emphasizes the importance of establishing strategies to obtain further support and authentic buy-in across all ranks in the service.

5.2.3. Theme 3: Internal support and receptivity to change

This theme considers the impact of the *Inner Setting* domain (*Culture*, *Implementation Climate*, *Tension for Change*, *Relative Priority*, *Goals and Feedback*, *Leadership Engagement*, and *Access to Knowledge and Information*) on the Ottawa Paramedic Service's shared receptivity and support of the clinic. Participants positively reported the progress made to change attitudes and behaviours towards mental health in the service throughout their careers. It was noted that by comparison to other first responder sectors (i.e., fire and police), the Ottawa Paramedic Service, in particular, is well equipped to manage the transition in creating a culture of tolerance towards workplace mental health. To illustrate the progress made to date, participants reflected on past instances that would no longer be deemed appropriate in the current climate. All members, including the union representative, appreciated the amount of progress made to-date concerning the service's broader commitment to improving institutional culture and recognizing the need for mental health supports.

> *"...I was a brand new Sup. [Superintendent], so this is eight years ago probably...we went to a MVC [multiple-vehicle collision], double fatality, and the crew was shitty. They weren't doing well with it, and so I sent them home [on paid leave]…it was an hour or two to the end of their shift, and I said, "What do you want?" The one guy said, "I just want to go home and see my family." "Okay, fucking go." Whatever, right?...my Commander gave me shit for sending them home. That's not what we do with them...I think today I would have still done the same thing, but if there's, "Hey, and you know what? On your way home, why don't you give this number a call and chat with them." Right? Something like that, and so I don't think today I would have gotten in shit…for sending them home. I don't think. People are different now. There's a different group there." (P018)*

Participants credited noticeable improvements in organizational culture due to several factors. The service's commitment to changing service members' attitudes was reported by promoting new individuals to leadership positions, hiring young frontline employees, and

implementing service-wide training and educational opportunities such as the Road to Mental Readiness (R2MR). Additional training for supervisors to educate them about how to respond if an employee is struggling with mental health difficulties was also credited in having contributed to improving organizational culture. Members who had been with the service for many years were referred to as the "old guard." Many of these members have since retired, which was also credited for more recent institutional culture improvements.

> *"...we bring in more and more younger people and some people who were from the older guards are retiring. The culture is definitely changing that it's okay to get some help when you need to. And the service is also getting better at providing the help. We're giving a bit of training on R2MR, I think at trying to level the playing field with everybody. I hope that they will be more receptive and know what to do, because I've seen often—'like I went to my manager and he didn't say anything and didn't do anything.'…he probably just didn't know what to say or what to do, and he was extremely uncomfortable getting told this because he didn't know what to do. It's out of the zone of comfort for a lot of them to be there because they don't know what to say. So, give them a bit of training as well to be able to better address that, I think will also help the culture." (P009)*

> *"We literally have come from an organization where we had this room that was called 'the woodshed.'…it was a negative connotation in the sense of you've kind of got - your heads on the block type of thing…It's you're going in there for discipline. We built this headquarters...We went through a lot of work in regards to footsteps of where people come into the organization...From an administrative process, you're talking to your supervisor - here she needs to have a meeting with you. We created a room. That room had two purposes. I can give you a congratulations letter. I can give you some positive feedback, but I can also give the negative feedback. Of course, human behaviour becomes that that room just becomes the negative feedback…I hope I created that image…that if you meet with me, it doesn't necessarily need to be negative. If I'm calling somebody say from the road, "You have a meeting with 022 in 20 minutes," and you're at the hospital in offload, how do we get away from that it's not a negative. Getting back to the clinic is, visiting a clinic is you're just visiting a clinic. What does it mean? Again, it's right back to that - I know it's back to the stigma piece, but how do we get there that it's not like it's going to become a party room." (P022)*

While these changes speak to the intentional steps that the service has already taken towards improving organizational attitudes and behaviours and their capacity for change, participants also emphasized mid-level and senior commands receptivity towards continued

service level modifications, wherever possible. Highlighted areas of improvement include: implementing internal policies and procedures to better enable members to access the clinic when needed; determining how to incorporate the clinic into work tasks, policies, and procedures; and continued program evaluation and modification of organizational goals and priorities. In order to facilitate these changes, participants were eager to see communication pathways be established between the clinic and the service. While ensuring that all patient information remains separated from the employer, this would present an opportunity for the clinic to relay information back to the service and union regarding internal barriers raised by members accessing mental health services, leading to the consideration of internal policy, procedural, and/or practice changes, where possible.

> *"We would like to put the policy in place to accept that because it's an external type of clinic, and it's about supporting our employees getting the help that they need so we need to be as supportive, and again, knock down barriers instead of building walls around the clinic. So, whatever barrier you think that the service would have, I think we need to know and be able to make sure we don't erect more barriers and take down the ones that are already present. Try to be as smooth as possible to get there. I mean they always contract with WSIB, which is one hoop after another you have to jump through when you are suffering, so how do we get you there? I think is has to be as smooth as possible, what can we do to help?" (P009)*

> *"I see there could be some possible [ways to reduce barriers]- as we move along with the clinic, there could be something that bubbles up. I'm most certainly open to discussions with the leadership team in regards to as these barriers pop up, is what can the organization do, or to be quite frank if we feel that is a conflict and that barrier has to remain, then at least we have that discussion. I think it's - a subject part 2 to that question is when we see the barrier, is what is this organization prepared to do to help break them down, and I can certainly tell you we're open to those discussions, and if we can't, we can't, but there's some things that we can do that we're certainly open to for sure." (P022)*

5.2.4. Theme 4: Benefits of organizational stability

Participants emphasized the benefits of organizational stability within the paramedic service as a whole, which is influenced by the *Inner Setting* domain (*Structural Characteristics*). At the best of times, first responder organizations function in an environment that is volatile,

uncertain, complex, and ambiguous (VUCA) (Camp, 2020; Camp & Mellows, 2020; USAHEC, 2019), rendering internal structural and environmental characteristics which contribute to organizational stability all the more important.

> *"There's so much else going on. I hate to use the expression, but right now, their heads are just above the water at work. The call volume is really high. We have, I think at least a 20 per cent absenteeism rate, so, and that includes everything. That includes those off on maternity leave, those off on worker's comp [compensation] or WSIB, those off on sick leave, so that's pretty high. So, then trying to replace those people…and everything I've said here applies to our dispatchers too, the communications officers. That's a tough job…Their absenteeism rate is really high too, and it's not getting any better." (P019)*

The ability to support service members' mental health includes the role of leadership and dealing with organizational issues beyond operational stressors. Leading through periods of crisis and high stress are inherent to the paramedic profession (Camp, 2020). However, providing members with a sense of confidence, security, and optimism during times of disruptive change in the workplace contributes to organizational stability (Camp, 2020). Participants reiterated that an associated structural advantage of the paramedic service is that it is integrated as a department within the municipal government. This structural component was reported to be particularly advantageous in cases where members are no longer able to return to the road and have years of service remaining before retirement. They are then able to access various other employment opportunities within the broader City of Ottawa. Prior to the amalgamation of the City of Ottawa in 2001, this opportunity was not available to paramedic service members.

> *"...if we have a very good plan in place about reduction to the injury, and this proactive approach, recognizing that there is inherent health and safety issues with just being a paramedic that I think the management team will try to do all they can to reduce and mitigate those things, but it's a risky job, and if I look at it from a physical or mental [perspective]…you're driving down the road, code 4, lights and sirens. We do everything we can that you're not going to maybe get in an accident. The injury patterns that we're seeing from a mental health, what plans can we put in place to mitigate that as much as possible? We're recognizing over 20 or 30 years that accumulation is going to have this injury pattern. If this person can no longer do that job, what I'm hopeful that we can do as an organization is - I'm not saying that's okay, you always have to keep working at it, but*

where does that person go after that? They have 10 years left as a career with the City of Ottawa, and I think that's what's great about the City of Ottawa. It's a big organization...It's almost a cyclic perspective is we recognize that after a 20-year career, 30-year career, that they still have years left to exist the organization, and I think in a reasonable way from a retirement perspective is what can we do for them?" (P022)

At the time of the interviews, there was significant uncertainty about whether the Government of Ontario would be restructuring paramedic services across the province and removing them from municipal organizations. Participants were keen to maintain the "status quo" due to the associated benefits of remaining within the City of Ottawa, further reinforcing the importance of organizational stability.

"One reason I don't want us to leave the city is when we're in isolation there was no place for people to go. Once we became part of the city, if people can't be a paramedic, they might move to bylaw. They might move to public health…people moved to all kinds of city departments doing different things. Never had that available before [prior to the amalgamation]. There was very little lateral movement or capacity to lateral move especially with operational injuries that made it to the point where they can't continue their original role. Being part of the city is a really huge opportunity to support the staff in that way." (P017)

5.2.5. Theme 5: Access to care within the service

The compatibility and fit of the clinic within the work processes, practices, and current high-priority initiatives within the paramedic service are influenced by the *Inner Setting* domain (*Compatibility*). Participants described strategies about how to operationalize how members can access mental health care within existing workflows and systems while maintaining their confidentiality. The protection of confidentiality was cited as a vital factor in engaging paramedics to seek and access mental health, contributing to the implementation and long-term sustainability of the clinic. Participants agreed that members in crisis should be able to access mental health care at the clinic while on shift, which mirrors current procedures that enable members to access the Peer Support Team both on and off-shift.

"So, accessing care on shift is something that they do now through the Peer Support Team and certainly through logistically having a paramedic come off shift for this type of treatment would be on a crisis basis and not necessarily as a scheduled appointment. A scheduled appointment would take place either through a shift replacement or on a day off that any other health profession might be accessed." (P016)

However, participants disagreed about whether members should be able to access care at the clinic while on-shift for scheduled appointments. Participants noted that accessing services while on-shift for non-emergent care would present operational difficulties from an organizational perspective. An example of such an operational difficulty includes maintaining ambulance levels within the city, especially during "level zero", when there are no available ambulances on the road due to drop-off delays at the hospitals and when others are occupied with other calls. Therefore, this would likely not be able to be supported by the service.

"The biggest thing I think, procedurally…is deployment. There's two trucks available, and medic access saying that he needs to go out of service to go talk to a counsellor…I think it should be part of your time. If you've gone to see one of the psychiatrists here, or psychologists...or you've come here, and they've said, "You know, okay, well we want to see you every week for the next three weeks, or six weeks, whatever." It should be work time...I don't think they'll [the service] buy into that. They're not going to - they're going to say go on your own time, but I think that it should be the first hour of your shift you go into OSI...I don't think they're going to buy it, but I think it should be. It should be." (P018)

Participants were optimistic about the perceived alignment of the clinic with the values of the paramedic service. Members emphasized improvements in organizational culture and noted that service members and the broader organization are more conscious and aware of the mental health impacts of being a frontline first responder. Participants frequently referred to the clinic as another available "tool" in the proverbial toolbox for members to access when they express a need for assistance.

"Well, they're a value to the service out of respect, trust, integrity and safe and respected for the work environment. Those are core values that fit right in." (P016)

> *"I think it would fit really well…I think people are much more comfortable now with the issue, much more aware, much more conscious of the impacts on their work life and their home life and everything else. The system itself, in terms of the service and how we deal with things have kind of institutionalized having checks and balance on people in terms of their mental wellness during the work and after critical incidents and flagging things and getting people assistance. Just having one more toolkit that's available for people is part of that continuum would fit really, really well." (P017)*

Participants described the clinic as a high-priority initiative for the paramedic service and one which is compatible and fits well alongside other high-priority initiatives.

> *"It's a high priority. We're conscious of it, and we're open, of course, and I already know we have an open dialogue, so if there's anything that bubbles up, we're certainly open to those discussions for sure." (P022)*

5.2.6. Theme 6: Clinic's role in decreasing stigma and barriers to care

Influenced by the CFIR's *Inner Setting* (*Culture* and *Available Resources*), *Characteristics of Individuals* (*Knowledge and Beliefs About the Intervention*) and *Process* (*Engaging*) domains, this theme highlights the valuable role participants foresee the clinic playing in working to reduce public and self-stigma, and barriers to accessing care while building on the last theme to operationalize the accessibility of the clinic. Despite considerable progress made during recent years to improving the organizational culture through leadership support, training, and education, the pervasiveness of mental health stigma in the workplace, particularly concerning accessing mental health services, was frequently reported by participants and was a prominent fixture in this theme. While participants acknowledged the existence of current gaps, they reinforced the importance of the continued role that training and education should play within the service to further legitimize mental health and seeking mental health care to reduce the prevalence of public stigma, self-stigma, and label avoidance.

> *"It's [stigma] much better than it was, that's for sure. You're talking to a guy who started in the '80s. We didn't talk about this stuff...there's people at my work that I think are the true really courageous people...someone who's chosen or had to go off [due to mental health injury] and has come back, but they don't come back right onto the ambulance ready*

to do calls. Typically, they don't. Our department has been pretty good at giving them light duties, modified duties to get them back into the fold slowly, and you see them... They're given projects to do...They're just not working the road...their co-workers see them and give them that look, or that feeling…they're certainly not approached and given a great big hug and saying 'hey man, I hear you're off. I hope you're doing well. How's your family', that sort of stuff...they sense it and I think they're very courageous to come to work and they're not working. That's hard on them. Some of these people probably since they were a kid wanted to be a helper and now, they're not helping. They're getting themselves better so they can hopefully make a return to work. So that stigma, yeah...it used to be a lot worse. Just you couldn't talk about it...I think our department here is pretty—I don't want to say advanced—but is ahead of other organizations..." (P019)

"...denial, stigma, obviously. There's been a lot of work done through education, through testimonials to try to break down the stigma. There's still a lot of stuff that we do is stigmatizing...as simple as when you reach out to mental health, like a lot of paramedics don't see that as real work...They didn't go to school to take care of crazy people [on calls]...it reflects on themselves and others. Like their partner calls 1025, 'so another 1025, another idiot. What did he do? His mom didn't give enough attention. And then their partner's suffering beside them, like yeah, that's me.' So, you need, obviously, to continue that education part internally." (P009)

Participants were also able to reflect on past experiences as either current (n=1) and former frontline paramedics (n=5) to provide insight into the pervasiveness of public and self-stigma within the service. One participant in senior management highlighted organizational practices, such as the biennial process surrounding scheduling and picking a new partner, which can be stigmatizing for members. The current process carries far-reaching impacts on a paramedic's schedule, professional relationships, and determines which platoon they are part of.

"Back to the stigma piece…it's something that I know they're [staff are] aware of, because...every two years we go through a scheduling working group, so you're picking a new partner, you're picking a new schedule, or you're staying with your partner, and you're staying on your schedule. That first opportunity - am I going to put my hand up that I want a new partner? Have I talked to my partner?...not trying to make light of, but it feels almost high schoolish again, of who are my friends? Clicking with and not clicking with these sub-groups. I could tell you, I think that's the biggest kind of stigma piece in the organization, because what follows there, your schedule, your relationships, your platoon, because when you're on a certain schedule you're actually in a [platoon]." (P022)

Another mid-level management participant described his experience returning to work after being on leave for almost two years and how he experienced the manifestation of stigma in the workplace

culture, representing both public and self-stigma. He reported that he received a sympathetic reception from colleagues in public; however, having been with the organization for many years and acknowledging the public stigma surrounding accessing mental health care, he perceived that discussions were going on behind his back. Several participants also used the term "broken toys" to refer to how members on short and long-term disability due to physical and/or mental health reasons are perceived by their colleagues.

> *"There totally is [stigma around accessing mental health care]...I just came back to work after a year and 10 months…and that was huge, and in my mind, going back to work and the stigma...everybody has been in my face…They've been very kind, and for the most part now, I don't hear anything about my time off. I've been around the organization long enough to know that that's not what the conversations are saying behind - when you're not there, right? I was at home with a cough, and he said, "We're all just broken toys," and it's true, and they don't know what to do with us." (P018)*

Members of senior management demonstrated their awareness of the ongoing public stigma towards mental health within the organization. They reported that despite considerable progress made in recent years to reduce the stigma surrounding mental health through strong leadership support and education, several internal barriers to care within the service continue to persist. Participants emphasized the importance of the clinic taking significant action to protect members' privacy and confidentiality due to the prevalent fear of being exposed to colleagues and/or leadership (i.e., self-stigma and label avoidance), and subsequent judgement when seeking mental health care (i.e., not being "fit for duty"). Participants in both mid-level and senior management positions acknowledged their awareness of barriers to mental health care, which included: 1) insufficient benefit coverage for mental health care compared to other first responder services in Ottawa (i.e., the Ottawa Police Service and Ottawa Fire Service).

> *"...if you're going with your own benefits, it's minimal. Not like a police officer when you get unlimited. You get $1,250.00 a year and that's for massage, for orthotics. So, if you get mentally ill or off-balance, January 1st, okay you get $1,250.00, but don't hurt your back*

for the rest because you won't be able to get those massages. If it happens now, and over the year you might have no money left and obviously it's a problem." (P009)

"Do you know how much we get a year for the Paramedic Service? $1,250, that's it for psychological help...people who would need to go often, because they have PTSD, they have a diagnosis and they need to go frequently...One of the barriers to continuing to go is our limited psychological coverage through the contract and through the City, the contract, collective agreement. So, that could be a barrier." (P019)

2) Impacts to career progression resulting from distrust of senior management. 3) Fear of senior management being aware of members having sought treatment for mental health care; and 4) fear of breaches of confidentiality resulting in the employer being notified that a member is not physically or mentally "fit for duty." These barriers contributed to mid-level and senior leaders' perceptions of barriers impeding help-seeking and access to mental health care, which further reinforced the recommendation from participants that the clinic must remain external to the organization. The recommendation to ensure a division between the employer and mental health professionals within the clinic was unanimous. Participants emphasized the importance of establishing this clear division to avoid the risk of any impression that the clinic is an employer-related resource, potentially stoking misinformation regarding breaching the confidentiality of members seeking mental health care and sharing personal health information with management.

Participants highlighted cultural characteristics of paramedics, particularly the importance of not being seen as weak and the significance of being seen as strong as a core component of their personal and professional identity.

"...I think work should also keep an arm's length from the clinic to avoid the fear that the Chief will get an audio and video transcript of any conversation that happens in this building, because the number of times the employer tried to do the right thing—like one day we had three chiropractor assessments...it's free of charge just go get your back checked to see if you need anything. Nobody went, because they were afraid that the employer would get the result...that's why the organization needs to keep an arm's length from the clinic so if even if it would never happen, there's ethics, there's colleges, there's like so many things that would make it impossible for this to happen. People still are paranoid about this." (P009)

"I think impartiality is important, because…depending on the labour relations environment in the workplace, there sometimes can be a lot of suspicion that either management or WSIB or the employer, per se the city is only looking out for themselves, and not really the employee, and they just want to write them off as quickly as possible...that's one of the - been the long struggles I know for city EAP was people early on would label it as, "Well, that's part of the city, so they're just going to tell management everything they need to." (P017)

Participants identified opportunities where the clinic could aid in facilitating improvements to organizational culture to address public stigma, self-stigma, and label avoidance. In particular, several participants discussed the lack of support in place for members nearing retirement to help them transition and prepare them for the potential psychological impacts and shift in personal and professional identity. Participants also highlighted the difficulty that members encounter in reconciling their personal and professional identity when transitioning from short or long-term disability into new positions within the City of Ottawa, if they are no longer able to return to their prior roles.

"…another stressor is when people are transitioning from their role...You want to be a com officer [communications officer], or you want to be a paramedic or a frontline role like that. You define yourself as that role. It's who you are...You may have done it your whole adult life, and then - and you kind of get very addicted to it, because of the whole - the stress, you certainly like that, and you may be uniquely suited to it. I say, if you don't have ADHD before you're a paramedic...because you fix everything in a short timeline and you move on. People will generalize that to the rest of their lives all the time, especially if you know any paramedics that will resonate. They don't plan anything. They just go - because they can...They don't plan ahead. Probably the most frustration thing…they're highly functioning hamsters. They live fast, with a high pulse rate, always on the go…" (P017)

"So, you guys are getting ready to financially retire, right? But are you ready emotionally to let go?...there's a lot of first responders struggling with this. See what we expect now as a society that we send kids over to combat…they do three tours of duty and they're 30...And they come out of it if they haven't been killed over there, or they're injured physically and certainly mentally. We expect them just to be able to carry on with their life without help. Today: unacceptable, right?...why would we expect someone who devotes their life as a firefighter, cop, or paramedic for 35 years…that they're going to be okay when it's time to [retire]. I think that that's kind of ridiculous and irresponsible. So, now that we know that that's going on, what can we do to help them prepare to transition to civilian life? We

should offer courses on that and your centre could be the centre that offers courses on that." (P019)

Finally, all participants foresaw that a core component of operationalizing the clinic's implementation and supporting its long-term sustainability should include working towards meeting paramedic needs to effectively engage them. The inclusion of robust strategies to maintain the privacy and confidentiality of all paramedics seeking mental health care; provide affordable mental health care due to limitations in benefit coverage for psychological services; and provide education and support for mental health, transition in roles, and retirement were highlighted as being integral to decreasing barriers to accessing mental health care and stigma reduction.

5.2.7. Theme 7: Adaptations to increase feasibility and long-term sustainability

Impacted by the *Intervention Characteristics* (*Adaptability*, *Design Quality and Packaging*) and *Characteristics of Individuals* (*Knowledge and Beliefs About the Intervention*) domains, this theme builds on the necessity of tailoring the clinic's operational practices, policies, and procedures to best meet the needs and preferences of paramedics. The importance that the clinic addresses paramedic needs, including timely access to mental health care, was identified as paramount to increasing the likelihood of paramedic participation across all ranks, thereby subsequently supporting the feasibility and long-term sustainability of the clinic. All participants also noted the importance of a 24/7 presence within the clinic in recognition that paramedics work within a shiftwork environment and that the clinic's hours of operation should be reflective of this, including having available hours during evenings and weekends. Participants also emphasized that the services in the clinic should be tailored to meet these needs by including different models of care to accommodate patient needs, including access to a 24/7 helpline to obtain counselling or support and the opportunity to attend appointments via telehealth.

"…if this clinic were to have, like a 24-hour kind of crisis, even someone to call. Maybe you don't come here at 3am but someone to call...would be super important, because you can't pick and choose when you're on the ledge." (P019)

"I think it's critical…Paramedics - mental health has long been an issue in the service. I got my first uniform jacket from somebody who killed themselves on duty, or off duty, but probably a result of workplace exposure. It's long been an issue. There hasn't been any supports, people in the long past, people self-medicated probably for the most part, and like physical injury, people broke before they retired. Nobody retired, they were physically broken or mentally broken from the work, basically crippled out, disabled out from the workplace because of the nature of the work."(P017)

"There may be circumstances where it doesn't need to be this second, but maybe by the end of the week. The complaints that we hear are waits of multiple weeks. 'So, I had to wait three weeks for an appointment and really without knowing what that particular circumstance was', but whoever says those things thinks that that wait is too long. So, the sooner I better...and a triage capability should be in there so that those that need immediate assistance can access it." (P016)

Participants underscored the importance of adapting five core components within the clinic to better support and enable paramedics to access mental health care. The first included ensuring that the clinic's practices are culturally competent and that paramedics are treated through a trauma-informed lens. Hiring clinicians who specialize in first responder mental health and understand the culture was highlighted as an integral factor and would also differentiate the clinic from existing mental health services.

"...if they would come here [the clinic], you can direct them to the right resource. That would be a huge advantage. First responder centric, people would not come back from their appointment, 'I made my psychologist cry,' which is something we hear fairly often...First responder centric, almost a seal of approval. I think that would be probably what would differentiate this clinic from everything else." (P009)

Participants also noted the importance of using tailored approaches to provide services to all ranks due to the different ways they have been exposed to PPTEs.

"The focus is, and appropriately so, the focus has been on the frontline staff...The exposures that paramedics have, obviously, are very real and very intense. That doesn't necessarily decrease for kind of first line supervision or their supervisors or the executive team, or the managers in the organization. The paramedic will experience firsthand those scenes and experiences. The supervisor will also, once removed, experience those things. They are not

far removed from those experiences. They may very well be in those scenes, maybe it's not daily but it's weekly. Their supervisors, lesser on the actual attendance, but deals with most of them, most of those calls somehow either through their staff, reading reports, whatever it might be and that permeates the organization. So, is there a different way to approach the management exposures versus the paramedic exposures? There probably is a different approach, but an approach is needed. So, I think there does need to be an avenue for managers to access these services as well, recognizing that those experiences are going to be slightly different, but not necessarily less impactful." (P016)

The second component included providing referrals to external services, as required, for patients to access care that the clinic is not equipped to provide (e.g., substance abuse) to best support their needs. The third included making the clinic's services accessible to both currently serving members and retirees.

"People work until retirement, and then also the injuries continue afterwards...that's the other aspect is what supports would there be through the clinic for when people leave the operational world and retire, and then, maybe deal with stuff. It's just one of those aspects that needs to be considered, because the issues don't end when you retire, and some that's when the issues would start." (P017)

"...my retirement is closer for me than many others…will it [the clinic] be available down the road to retirees?...it's a statistical reality that a lot of first responders who actually make it to retirement…We are not retiring healthy. We are dying off of cancers. We have mental health injuries that were never dealt with on the job and now that the shield comes off and you're a normal person again, that adjustment phase is real difficult on many of us. I'm not an 'us' yet. I'm not a retiree but I know it is...then there's mostly paramedics that either didn't make it to that "retirement" which is 35 years. That's a long haul. I'm at 32 completed and it's tough. And then one day you've prepared financially to go into retirement, but are you emotionally ready? And I would say that probably most of us aren't. So, we need to start thinking about them and maybe this clinic will be available to them." (P019)

The fourth element included ensuring that the clinic's location is accessible and reduces the possibility of potential exposure (i.e., potential identification), which would facilitate in reducing public stigma, self-stigma, and label avoidance and encourage buy-in.

"It's about the location. I think the Riverside is not very stigmatizing. Put it at The Royal [a psychiatric hospital] hmm—I know this is a one-stop shop for mental health, and I know this is probably a place that a clinic would go, but I know that it would be a place that would be considered…somebody says I'm going to The Royal, would be difficult, especially they would have to change into their civies, or they can just like walk in, in uniform. Who

knows why I'm here [at the TOH - Riverside]? Nobody knows. I can go see a dermatologist. I might be here for a professional function or I might come here to get some help. But you cannot walk into The Royal in uniform." (P009)

"I don't see a problem with this [TOH - Riverside], central. Because until we fix the stigma and other things, our members, our co-workers are often going to wait too late to get help until they are in crisis, but they don't realize it...their partner at work's not telling them...probably their wives, girlfriends, moms, dads, friends are realizing the change in them, but you better not bring it up." (P019)

The fifth component included the use of clear and engaging messaging to advertise the clinic. All participants underscored the importance of clear messaging to delineate the division between the clinic and the employer to address sentiments of distrust of management and fears pertaining to the confidentiality of their personal health information being shared with the employer, thereby encouraging buy-in and engagement from members.

"There has to be a division between the employer and the mental health professionals. They can't be seen as an employer-related resource, to maintain some distance there between the treatment and the employer." (P016)

5.2.8. Theme 8: Communication and engagement strategies

Impacted by the *Inner Setting* (*Goals and Feedback*, *Leadership Engagement*, and *Access to Knowledge and Information*), *Characteristics of Individuals* (*Knowledge and Beliefs About the Intervention*), and *Process* (*Engaging*, *Key Stakeholders*, and *Champions*) domains, this theme highlights existing communication pathways, education tools, and engagement strategies within the paramedic service that can be harnessed to facilitate the dissemination of information about the clinic and build rapport with service members. Detailed feedback regarding communication pathways was provided to amplify messaging surrounding the clinic and mental health. Participants touched on several approaches varying in intensity to target all service members.

Attending and presenting at the service's bi-annual in-class Professional Development Program (PDP) education training sessions was highlighted by all participants as the most effective

strategy and the best opportunity for face-to-face engagement with its members. External presenters can be booked into PDP bi-annually, which requires a resource-intensive commitment on behalf of both organizations (i.e., the service and the clinic). PDP training sessions last approximately 16 weeks and include 32 sessions to reach all 600 members. Other direct face-to-face engagement opportunities include regularly attending daily batch briefings, which occur at the beginning of each shift before paramedics deploy. Batch briefings include concise messaging of five minutes or less about critical issues and information. Logistics and communications staff also receive daily briefings from their supervisors at the beginning of each shift, while administrative staff are targeted laterally through communications from Commanders.

> *"These people would attend batch briefings in the morning before the officers deployed, and that in your faceness of it…made it very accessible, because they were there, and they were talking to you… I don't know if they were at every batch, but they were often there. For OSI to have all sorts of wonderful, smart people that are offsite somewhere, I don't know if the injured brain is working in that capacity to be able to reach out to that distance, whereas if the shrink standing in front of you…it's kind of - it's in your face...it needs to be - and even if once a week somebody's going to a different service just to sit on in, in on briefings every morning, and whatever to try and catch as many people as they can, and I think that education has got a big part." (P018)*

All participants described the Peer Support Team as a trusted and valuable resource within the service that is already well suited to disseminate information about the clinic, particularly to struggling members. Participants also suggested strategically appointing trusted and well-respected champions within the service in frontline positions in platoons and supervisory roles capable of acting as liaisons between the service and the clinic.

Less resource-intensive digital marketing strategies include posting essential information on the: LCD message boards to target paramedics coming into work and going off of shift; computers that members use daily for documentation purposes; and computers in the ambulances and vehicles used for mapping. To target administrative and communications staff members who

have access to City of Ottawa computers, participants suggested including messaging that pops up on the computer as a means to alert staff. Other recommendations to target the service at large included circulating communication directly from the Chief through direct memos, letters, and messages to all staff circulated by email and the internal newsletter. Participants also reported that social media and mainstream media have been used to communicate information regarding organizational goals and can be effective strategies to amplify essential information, depending on the intent of the messaging and target audience.

> *"Our Chief sent a memo out to all staff maybe six months ago was it that the funding for this was secure. Maybe it didn't even get to that, but that this clinic is a good thing. It will be implemented down the road and it's a positive step because there's so much talk these days about mental health and wellness in the workplace." (P019)*

Participants provided examples of how organizational goals, particularly those about mental health and wellness, have been communicated within the service. In particular, the service disseminated information about the Peer Support Team's expansion and the mental health training that peer support members receive (e.g., R2MR) through regular emails and during face-to-face PDP sessions with the Chief of the paramedic service. These sessions also provided members with an opportunity to ask questions, challenge information, and offer suggestions. Recommendations received during these sessions were tracked and reviewed by management to determine whether they could be implemented. In order to operationalize the advertisement of the clinic to support paramedics in accessing mental health care, participants emphasized the importance of several factors:

1) Translating research results in concrete and practical terms by highlighting factors like wait times and costs associated with accessing the clinic to reduce barriers to help-seeking. To further emphasize this point, one participant described how the current automatic cardiopulmonary resuscitation (CPR) model was selected between the final two options. While research regarding

their effectiveness was a significant consideration, frontline paramedics chose the lightest machine due to its practicality.

> *"...paramedics are sometimes…a bit superficial in their actions…If you submit research with values and stuff like that, honestly you're not going to get anybody...automatic CPR machines, there were two models…but the paramedics picked the lightest one. The effectiveness is probably fairly similar. They went with something that's light. They don't have to carry it up the stairs. They don't have to carry that heavy big bag up the stairs. Same thing with this, you need to figure out what would—so wait time, cost, a very practical application. That's how you're selling it to paramedics." (P009)*

2) Engaging in ongoing training opportunities, targeting all ranks in mid-level and senior management, particularly Superintendents (i.e., mid-level managers) as they have the most interaction with frontline members, to enable them to develop a more robust understanding of which associated mental health and behavioural changes may be indicative of declining mental health. To that end, participants reported that within the last year, the Leadership Module within R2MR was administered to all Superintendents as part of their bi-annual PDP training. 3) Finding strategies to engage and inspire leaders during training sessions was cited as key to augmenting current training and education practices from a top-down approach to further facilitate behaviour change and negative attitudes and perceptions that some members in leadership positions associate with mental health.

> *"Training is obviously one thing. We are doing it. Give the tools to better understand and try to see some behaviour changes as being related to mental health rather than pure department…we're giving them the R2MR, the leadership portion to all the Superintendents, so they get a better understanding. And it's hard to change attitudes. They have to be inspired. If you want a change, they have to be inspired from the top down. I needed someone from Peer Support to do a debrief and I was told no, we don't have the levels. Went to the Deputy Chief—Chief, I do have a problem here because I need somebody for Peer Support and they said they don't have levels. Well fuck the levels." (P009)*

4) Authentic buy-in and support of mental health and leadership engagement in sending out announcements and information regarding the clinic from a top-down approach were described as vital in order to convey the message to the service that the organization and the City of Ottawa not

only supports but acknowledges the credibility of the clinic is impactful, even amongst members who may be cynical of senior management. Setting the tone from the top-down was described as integral in obtaining buy-in from the bottom-up amongst all paramedic service members.

> *"I think no matter how cynical people may be of senior management, I think the leadership example of people making those announcements and spreading the information sends a message that the service supports it, the institution, that the city supports it, that it's important, and that it's credible." (P017)*

> *"I've talked to a couple of Deputy Chiefs since my return. One, I will say yes, the other one, I'll say he pays lip service to it. I could be wrong. I hope I'm wrong, but I don't know if they give a shit to be honest...our old Chief actually said this, "It's not my job to worry about that. I'm kind of worrying about the running of the service and all that." I don't think you can have the exclusive from each other. You don't run your service without them, without those guys out there doing the job every day...It's got to be top priority, and I don't care if you're City of Ottawa or Tim Hortons, if there's no buy-in from the top, there'll be no buy in all the way down..." (P018)*

5) Finally, participants emphasized the importance that the clinic's implementation of available services are in line with all advertised content and that they meet the needs of paramedics, stressing that there is only one opportunity to make a successful first impression.

> *"...there's one chance to make a first impression, so this needs to get off the ground smoothly and provide the services that nobody's going to expect it to be the be all and end all. But whatever services that are advertised and offered, need to be realized." (P016)*

> *"That's your brand. That's basically how you're selling this clinic is we are there for you, specifically designed for first responders. So, since it's your brand, it's very important." (P009)*

5.2.9. Theme 9: Importance of evidence-based practices and cultural competency

This theme is affected by the CFIR's *Intervention Characteristics* domain (*Evidence Strength and Quality*, and *Relative Advantage*). Most participants identified the inclusion of evidence-based research and evidence-informed practices as significant strengths of the clinic, further supporting the significance of the intervention and its perceived value in the eyes of mid-level and senior management in the service. The inclusion of culturally-informed first responder

centric practices and approaches was repeatedly reported as differentiating the clinic from currently available mental health services and resources.

> *"...if they would come here [to the clinic], you can direct them to the right resource. That would be a huge advantage. First responder centric, people would not come back from their appointment, 'I made my psychologist cry,' which is something we hear fairly often...First responder centric, almost a seal of approval. I think that would be probably what would differentiate this clinic from everything else." (P009)*

To facilitate the clinic's long-term sustainability beyond short-term grant funding, participants underscored the importance of presenting evidence of its effectiveness in addition to emphasizing the reliance on evidence-based approaches to the City of Ottawa's municipal council. This approach was highlighted as key to obtaining support and buy-in from the City Council for the clinic and the paramedic service.

> *"...I think those approvals should be kind of rubber stamped...if it's studied, as we are doing, and we know that it's valuable. We know that people are dying because of work, and I think that they need to make it happen...They're going to - especially if it has to go to a council or anything like that. They're going to need the study, the information behind it to say, "This is why we need to do it." I guess those approvals will need…I don't think that we need a whole lot of proof that shit happens, and things go bad. That's pretty self-evident. If they need proof of that, then you answer it." (P018)*

Participants also foresaw the clinic as being equipped to provide timely access to culturally competent mental health care, which would provide beneficial outcomes to the service. By providing access to timely mental health care, participants highlighted the significant operational and cost savings associated with getting employees back to work from short-term disability leave who are prepared to return to the workplace within the allotted 90-day period. One participant in senior management acknowledged the inherent unfairness of the current system's inadequate and delayed access to mental health care in Ontario due to paramedics being included as part of the general population. At the same time, he recognized that even with the clinic's support, not all

members would return to work or return in another capacity in the City of Ottawa, depending on their level of injury.

> *"...if I'm looking at my data, and I see people returning to work, and then they're off again in a short period of time, because they actually haven't had the help, but because the organizational structure is obviously, I have a contract with you to be in the workplace...We all get that pressure. It's no different in any organization...I think that's where the unfairness to the first responder community comes in, that we're thrown into kind of the regular population, and from a timeline perspective…it has to be earlier than that because just from that exposure. Be it if we were saying less than three months, if I link it into an administrative process, greater than 90 days, if the paramedic's returning on the 89th day, they go right back in the ambulance and start doing calls. On the 90th day, they come into the office, and go through a gradual return-to-work active service program." (P022)*

Participants identified that the clinic's evidence-informed practices, knowledge, and cultural competency in first responder mental health were significant advantages. They foresaw an opportunity for the clinic to assess and/or verify existing evidence behind external resources being marketed to paramedics to determine whether their claims are unsubstantiated. Engaging in this capacity would place the clinic in a gatekeeper role.

> *"There seems to be a plethora of peer support groups popping out of the woodwork. Some ranging from the absolutely wingy angel supporting crystal channelers, to be gentle, to the various peer support groups of all kinds popping up, and I'm leery when that's occurring, because is there a certain fragmentation, or how much - are people truly getting the support they need, or are they getting led down by some group…probably well meaning…people who don't feel comfortable in one group, so they start their own group...you kind of see some of the groups becoming maybe - may at some point be harmful to some of the people involved as opposed to helping them...the OSI [clinic] may have a role in any way regulating or verifying those groups..." (P017)*

5.2.10. Theme 10: Costs and potential consequences of funding and not funding the clinic

Costs and associated consequences of implementing the clinic with or without securing sustainable funding were influenced by the CFIR's *Intervention Characteristics* (*Cost*) and *Inner Setting* (*Available Resources*) domains. Participants viewed the clinic and providing members with timely and appropriate mental health care as a worthwhile investment with the potential to generate considerable cost savings for the paramedic service resulting from a significant reduction in WSIB

costs by getting members off of short and long-term disability and back to work faster. Participants emphasized the associated financial benefit of keeping members physically and psychologically "fit for duty," which would provide beneficial outcomes by reducing workplace absenteeism and overtime salary costs necessitated to pay for coverage of members taking sick days and/or on short or long-term disability leave.

> *"…I think that it's still a good investment, because you don't have people like me off on WSIB for whatever, 20 months…so, there's a huge cost savings there. When I'm out of the workplace, it costs the service 130% I believe to pay WSIB to pay me. There's a financial benefit to keeping people healthy, physically and…psychologically, right? People need to show up to work, right? If I call in sick, they've got to call somebody in on overtime, and so they're paying me to be at home, plus they're paying time and a half to fill my spot. It's expensive to have people book off sick. If we can send them to OSI for an hour…and that provides six months of sick leave, it's good money investment." (P009)*

> *"On one level, we would expect this to create savings. From an employer perspective, this is not only a health issue but it's an attendance issue and staff who are healthy, attend work with all the benefits that come with that. So, we would see it as ultimately a cost savings enterprise." (P016)*

This theme also included discussions pertaining to the availability of internal resources and sources of sustainable funding. While the potential of securing funding from the paramedic service and/or from the broader municipal government by approaching City Council was discussed, senior leadership participants expressed that while the City of Ottawa is the employer, the employer is not a provider of health care services. These discussions led to the suggestion of approaching the provincial government as a more suitable and likely source to secure sustainable funding. In lieu of funding, participants highlighted the potential for further discussions regarding the accessibility of internal resources which could be made available to the clinic. Suggestions of in-kind support included clinic space, equipment, training opportunities for clinic staff such as ride-a-longs, and programming the clinic's phone number in the ambulance cellphones that paramedics have 24/7

access to. Permitting access to ambulance cellphones could facilitate real-time opportunities for paramedics to step away while at the hospital to reach out for help while on the job.

Despite the financial benefits of implementing the clinic, several participants also highlighted the potential consequences of launching the clinic first without securing sustainable funding. Participants noted that while there is considerable support for the clinic from senior leadership within the paramedic service and the City of Ottawa, the consequences would be devastating for members if they could no longer access services if sustainable funding was not secured ahead of the clinic's implementation.

> *"...there's a lot of willpower and there's a lot of traction at the moment to help first responders with their mental health, but like everything else, put your money where your mouth is. As much as a lot of people would volunteer their time to, eventually you need money to make this happen. So, I just hope that we can have sustainable funding, because getting it going is one thing, but keep the momentum and keep it going is another challenge. If you have funding for two years and then the funding runs out, so the clinic has to close, it'll be devastating." (P009)*

> *"...it speaks to the need for the clinic to be a permanent thing and not a temporary, "Oh well, we got funding this year, and now it's gone." You're almost better off not to even have it exist if it's not going to last, because it will have short-term benefit, but you're just getting people's hopes up. It really does at some point need to be a permanent long-term solution, so it can provide that long-term support, because people have long careers, especially in paramedicine." (P017)*

One participant discussed past instances where members were left without support when research projects were not awarded continued funding and subsequently disappeared. Participants also foresaw that not securing program funding would reduce members' willingness to access and engage with supports from a service that is not sustainable. As such, participants strongly advised that it would be better not to implement the clinic at all if sustainable funding is not secured ahead of time.

> *"I'm very concerned about what happens after the clinic, if I say closes, or the study ends, it's about sustainability...we're delivering a service to a very specific clientele that are very sensitive to their health, and it ends. If it's not sustainable, is where are we going from*

there as a management and leadership team?...like any organization…unless it has some type of sustainable funding, we have to be realistic of where is this clinic going to go, and it's something I know General Manager Di Monte [General Manager of Emergency and Protective Services] is certainly concerned about as well is we're putting a lot of energy into the clinic, and not just about us, all the leaders around the table, the clinic itself...We're going to revert to the old way at the end of the study. How do we avoid that? That will actually tap right into the investment by the paramedic, why bother, if I'm only going to have this for two years, why am I investing myself, and if I'm just going to refer to the old way of doing things. It ties into a couple of questions of that investment of that person into the clinic, is where are we going with it?...that's something I think the management teams need to have more discussions of is what's the future look like, and it's hard to do that while we haven't started yet, but the earlier that we start having the discussions, I think the better." (P022)

Participants also expressed that the clinic's lack of sustainable funding would also lead to increased costs to the paramedic service, including increases to workplace absenteeism, WSIB costs, and costs associated with the return-to-work program resulting from reverting to previous ways of handling mental health.

"...if the clinic stops and is not sustainable, I see increased costs to the organization…I think we would refer to sort of just be the old ways, and I think that we'd be incurring costs - again, those very tangible ones in regards to workplace absenteeism, increased WSIB costs, the work integration program, all those pieces. (P022)

5.2.11. Theme 11: External influences of feasibility and long-term sustainability

The final theme examines the impact of external influences on the decision to implement the clinic and the effects on the paramedic service, its members, and their engagement in the clinic. These external factors were influenced by the CFIR's *Outer Setting* (*External Policy and Incentives*) domain and included federal and provincial legislation, external policies, and the impact of collective agreements. Participants referenced the benefit of the Federal Framework for PTSD (Act C-211) from a national perspective; however, as healthcare is provincially mandated in Canada, they noted that its impact on the service at the municipal level was minimal at the time of the interviews. Most participants described the provincial presumptive legislation - Supporting Ontario's First Responders Act (Act 163) as having had a moderate impact on the paramedic

service and its members. Act 163 intended to provide faster access for first responders to access workers' compensation for mental health care coverage if certain conditions are met, including the receipt of a diagnosis of PTSD. The presumptive legislation includes the assumption that mental health injuries were sustained due to employment-related trauma.

> *"Right now, provincially, man, what a mess...But we do have Bill 163…where it's assumed to have happened at work if you get a diagnosis of PTSD and only PTSD…But that's not really going to be too helpful, and with this current government it's a mess. I'm being quite honest with you." (P019)*

> *"...provincially there is the presumptive legislation, well this is really not a lot to comment on that provincial legislation. It changed the potential funder of claims from the municipality to the province so big deal really. It has had an impact on, I think, it's a growing impact. There wasn't an immediate rush to WSIB when things happened, and I think because of a couple of things. I think it was easier to claim on the employer side than on WSIB. It's easier to just say you're sick and not come than go through WSIB. However, that reluctance seems to have kind of changed. And I think there's support and growing support from both provincial and federal areas for mental health supports." (P016)*

While acknowledging the benefit the provincial legislation has had, some participants identified challenges associated with the Act. The requirement to receive a diagnosis of PTSD to obtain approval for mental health care coverage was identified as a barrier to help-seeking and accessing mental health care. The exclusion of coverage of mental health conditions such as major depressive disorder and generalized anxiety disorder under the presumptive legislation were also highlighted as barriers. Participants noted that these challenges further hindered help-seeking and access to care as members receive limited mental health benefits through their employer. Should paramedics be provided with unlimited mental health benefits, participants foresaw this as a potential avenue to help support the clinic as the insurance provider would be covering the cost of the appointment. To do so would necessitate the inclusion of the union, in addition to the union agreeing to advocate for a sub-group of employees within the City of Ottawa to modify the collective agreement to

increase the benefit coverage. Modifying the collective agreement to this effect was reported as one of the most significant external challenges.

> *"So, the union would have to do something they normally don't do and it's to advocate for a specific group of employees rather than the entire board collective. So, that would be a big thing if the union were to move ahead, that would be probably one of the biggest challenges that I foresee with the collective agreement. The rest, policies and procedures, it could be very easy. If we're going to give unlimited benefits specifically to first responders...I would easily frame it if you're covered under presumptive legislation, then it should be unlimited." (P009)*

Participants also discussed the confusion amongst paramedics regarding negotiating the diagnosis process under Act 163 and meeting the deadline to report claims, particularly for retirees. They recognized that the clinic could help provide insight into the impacts of exposures to operational stress injuries throughout a career to further understand what barriers to mental health care exist.

> *"Right now, people don't really know how to negotiate the diagnosis process under the presumptive legislation, or…if you leave work, how long are you eligible? This is a weird time set for retirees. Do you have one year, two years, after that, they write off everything?...if you've been fine, and then the train catches up with you and runs you over two years down the line? Are you out of luck? We don't know enough around people's exposures and the outcomes and impacts on them related to their whole work career experience to understand what those barriers are. The clinic may help change that, but those at the start, I think those will be some of the factors." (P017)*

While some senior-level management participants spoke positively about the support of the province's mental health mandate by ministers in Ontario, they were uncertain of the scale and influence that potential forthcoming provincial policies, if passed, would mean for paramedic services in the province. Participants foresaw that if the government passed the change to restructure paramedic services in Ontario, the move would significantly alter both the internal and external organizational environments for paramedic services across the province. As no additional information had been released at the time of the interviews, participants could only speculate about what these changes could entail and could not comment on how this could impact the clinic's

sustainability. Should this change occur, participants recommended revisiting policies, procedures, and potential funding models for the clinic.

> *"I do, from a funding perspective when I talk about sustainability, from what I hear currently from the current [provincial] government, their mandate from mental health…From a mental health strategy from ministers has been very positive. One of the concerns that you will hear from my staff is from the regulation, so the Minister of Health himself and the division…is run by the municipality, funded partially by the province, and there's been discussion in the province so she could take us over - like upload us back, so that's prior to amalgamation in 2001. That would be a massive change, and I couldn't say how it would impact. It could just continue on the relationship piece, but certainly that would all have to be reviewed in regards to policy and procedures and methods and funding models and all those pieces." (P022)*

Finally, participants did not identify a need for any additional changes to external policies, nor did they feel that the current external influences would impact the decision to implement the clinic or its feasibility or long-term sustainability.

Chapter 6: Discussion

This chapter contains a summary and a discussion of the TDF and CFIR results, which synthesizes their content and relates them to the broader public safety mental health and military contexts in Canada and internationally. A critique of the TDF and CFIR frameworks follows, including an assessment of the associated advantages of using the CFIR + TDF approach to elucidate organizational readiness and behaviour change. The next section includes a reflection of my positionality and reflexivity about the research. Thereafter, a discussion of the significance of the findings and a series of recommendations for organizations who seek to replicate the study follow, leading to a breakdown of the next steps. This chapter concludes with closing thoughts and suggestions for future research. The bibliography and appendices follow this chapter.

6.1 *Integration of Findings*

The current study aimed to apply the CFIR and TDF determinant frameworks to evaluate the First Responder Operational Stress Injury Clinic intervention prospectively. The intent was to clarify critical barriers and facilitators of implementation that needed to be assessed at multiple levels to successfully implement the clinic in Ottawa, Canada. While some of the barriers to implementation, particularly the prevalence and manifestation of stigma, were expected, the TDF and CFIR inspired interview topic guides helped clarify critical aspects to address to implement the clinic successfully. The findings highlighted the pervasive and troubling nature of several barriers to help-seeking and accessing mental health care, in addition to implementing and sustaining the clinic. Barriers to help-seeking and accessing mental health care within the TDF interviews included: fears regarding confidentiality; lack of trust, especially with leadership; lack of cultural competency of currently available mental health services; and stigma (i.e., public stigma, self-stigma, and label avoidance). The same barriers also arose within the CFIR interviews.

The CFIR interviews explored all five of the framework's domains (i.e., *Intervention Characteristics, Outer Setting, Inner Setting, Characteristics of Individuals,* and *Process*), which were relevant to the analysis to assess the feasibility of implementing the clinic and its long-term sustainability. At the individual level, participants saw a high amount of opportunity and potential for the clinic, which, if successful, would, in turn, yield significant benefits for the organization from both an employee wellness and financial perspective, including reducing sick leave, WSIB, and absenteeism costs.

6.1.1. Barriers

The most commonly reported barriers included stigma and deeply rooted concerns regarding confidentiality (*Inner Setting)*. Stigma was reported as one of the most critical barriers to care across both the TDF and CFIR interviews, including the fear of being labelled as "weak" and of employment-related discrimination. Much like military culture, the emphasis on the importance of remaining resilient in the face of crises rather than being seen as "weak" was highlighted across all ranks in the TDF and CFIR interviews as a core component of paramedic personal and professional identity. The value placed on the duty to serve regardless of how paramedics feel was a noteworthy comparison to military mental health (Dickstein et al., 2010; Nash et al., 2009; Stirling et al., 2019) and how stigma was seen to manifest in the paramedic service, which was in line with literature on military mental health (Dickstein et al., 2010; Nash et al., 2009; Stirling et al., 2019). In Canadian and international military literature, public stigma, self-stigma, and label avoidance have been repeatedly recognized as barriers to help-seeking and accessing mental health care (Ben-Zeev et al., 2012; Iversen et al., 2011; Stirling et al., 2019), often resulting in avoidance of seeking mental health care or delays in beginning treatment.

There were three types of stigma evident across the TDF and CFIR interviews, which manifested in public stigma, self-stigma, and label avoidance. These findings highlight shared aspects of military culture and map on to Ben-Zeev et al.'s conceptual model of military mental health (Ben-Zeev et al., 2012) and support recent research on first responder and public safety mental health (Haugen et al., 2017; Krakauer, Stelnicki, & Carleton, 2020; Ricciardelli et al., 2020). The high prevalence of machismo and associated stigma in military populations (Held & Owens, 2013) has been hypothesized to explain why military members are especially likely to be opposed to help-seeking (Clement et al., 2015). The importance of implementing strong measures for stigma reduction (Coleman et al., 2017; Dickstein et al., 2010), including education and training to make paramedics at all ranks more aware of the signs of emotional, behavioural, and physical impacts associated with stress from PPTE exposures may be beneficial in reducing stigma and increasing help-seeking behaviour (Clement et al., 2015; Reavley et al., 2018; Ricciardelli et al., 2020). In addition, further investigation of the culture of masculinity in paramedic services where gender distribution is not well balanced amongst frontline, leadership, and within the organization at large requires additional consideration of their impact on help-seeking behaviour.

The prevalence of fear of employment-related discrimination resulting from breaches in confidentiality *(Inner Setting)* regarding seeking mental health care was a significant barrier and discussion point during both sets of interviews. As such, these findings are supported by recent research in PSP mental health (Ricciardelli et al., 2020) and also aligns with currently serving military personnel (Dickstein et al., 2010; Nash et al., 2009; Stirling et al., 2019; Vogt, 2011) and Veteran populations (Dickstein et al., 2010; Jones & Hanley, 2017; Vogt, 2011). The delivery of confidential mental health services within the military populations was reported as a vital facilitator in improving service members access to mental health care within Canada and

internationally (Dickstein et al., 2010; Fikretoglu et al., 2008; Iversen et al., 2011; Stirling et al., 2019). The military approach and models of stigma (Ben-Zeev et al., 2012) may serve as useful tools to determine how best to approach providing confidential mental health care for paramedics and other first responders.

Other barriers that impact paramedic help-seeking and, subsequently, the clinic's sustainability included distrust of leadership (*Inner Setting)*. Lack of trust of senior leaders was most prevalent amongst employees with more than ten years of service. These members reportedly still struggled with feelings of distrust of the current leadership team's authentic support of mental health due to the long-lasting impacts of past senior leaders' negative actions and attitudes, which often reinforced barriers. Additional barriers within the *Inner Setting* which could impede members from accessing care in a straightforward manner, thus potentially impacting buy-in among paramedics and the clinic's long-term sustainability included: 1) addressing how to allow members to seek mental health care during operational difficulties (i.e., during "level zero," when there are no available ambulances on the road). 2) Insufficient benefit coverage for psychological services was also reported as a barrier for continued mental health care, particularly for members who have not received a PTSD diagnosis and are therefore not covered under Act 163, the provincial presumptive legislation in Ontario. To best mitigate this barrier, pathways to provide affordable mental health care need to be explored and offered by the clinic.

While currently classified as a facilitator, organizational stability (*Inner Setting)* was identified as a potential future barrier that the clinic and the paramedic service may have to contend with collaboratively. At the time of the interviews, there was significant uncertainty about whether the Government of Ontario would proceed with restructuring paramedic services across the province, thereby potentially removing them from under the regulation of municipal governments

and thus disrupting organizational stability and causing disruptive change. While these discussions were paused as a result of the COVID-19 pandemic, participants previously expressed resistance to the potential for such a significant organizational change and their eagerness to maintain the "status quo." While resistance to change relates to the innate human condition to oppose change (Forsell & Åström, 2012), there are fundamental benefits of organizational stability, particularly when first responder organizations function in an inherently VUCA environment even at the best of times (Camp, 2020; Camp & Mellows, 2020; USAHEC, 2019). The full extent and impact of such an organizational change would require further in-depth discussions to work through a host of new factors that are unknown at the present time.

The final barrier included the lack of sustainable funding for the clinic *(Intervention Characteristics)*. While there was considerable support for the clinic from senior leadership, participants emphasized the potentially devastating consequences if the clinic was launched before securing sustainable funding, risking causing members to lose access to clinical services if the clinic is discontinued. Failure to secure guaranteed funding and resources was viewed as a key risk that would directly impact members' willingness to initiate accessing services, thus significantly affecting the clinic's implementation and long-term sustainability. Investigating alternative funding sources, including provincial and/or federal funding sources, and approaching WSIB, will need to be explored to determine how best to obtain sustainable funding. To mitigate the abovementioned barriers, further communication between the clinic and the paramedic service will be required to determine how best to approach these complex barriers as they evolve to best support paramedic needs.

6.1.2. Facilitators

Identified facilitators included the *Relative Advantage*, *Design Quality and Packaging*, and *Evidence Strength and Quality* of the intervention compared to current practice (*Intervention Characteristics*), federal and provincial recognition of the high rates of PTSD among PSP (*Outer Setting*), *Leadership Engagement* and awareness of the *Relative Priority* and *Tension for Change* to address paramedic mental health within the paramedic service (*Implementation Climate*), and the alignment of the *Compatibility* of the intervention with the service (*Inner Setting*). In addition, *Available Resources* and internal *Networks and Communication* within the paramedic service to help facilitate the implementation of the intervention demonstrate the organization's *Readiness for Implementation* (*Inner Setting*). Leaders displayed a strong sense of personal *Knowledge and Beliefs About the Intervention* to help support paramedic mental health (*Characteristics of Individuals*), and the engagement of formal and informal leaders (*Opinion Leaders, Champions, and Key Stakeholders*) to facilitate *Engaging* paramedics across all ranks to access the intervention as a potential resource should they require mental health care (*Process*).

Throughout the CFIR interviews, the clinic was viewed favourably and received support from mid-and senior management and the union. The most commonly reported facilitator included that participants viewed the clinic as appropriately equipped to provide timely, comprehensive, and culturally competent mental health care. The clinic's focus on evidence-based research and evidence-informed practices was also emphasized as a significant component of the intervention's strength (*Intervention Characteristics* and *Characteristics of Individuals*). These combined factors influenced participants to view the clinic as a way to fill a critical gap and augment existing services (i.e., the Peer Support Team and EAP). Remaining facilitators positively impacting the clinic's implementation and long-term sustainability are categories within three broad groups: 1)

formal and informal buy-in; 2) associated anticipated benefits resulting from the clinic's implementation; and 3) strengths of the design of the clinic.

Formal and informal buy-in:

The high prevalence of internal support, receptivity for change, and engagement among formal and informal leaders within the Ottawa Paramedic Service at the time of the interviews is a vital facilitator within the *Inner Setting.* The establishment of clear communication pathways and the development of professional relationships between the service and clinic to translate key information (i.e., identifying and translating systematic issues) in conjunction with the service's willingness to amend or implement policies to facilitate members in seeking mental health care, while maintaining confidentiality, served as examples of the level of support and receptivity to change within the current climate. Leaders repeatedly acknowledged that the clinic fills a gap to meet paramedic mental health needs demonstrating their understanding of and appreciation for the value of research and evidence-informed practice within the clinic (*Intervention Characteristics)*. The availability and potential to provide access to internal in-kind resources and services (e.g., available room/space, cellphones, advertisement pathways) in support of the clinic demonstrated buy-in from mid-level and senior management (*Inner Setting*).

Associated anticipated benefits resulting from the clinic's implementation:

A significant facilitator and further support of the clinic's paramedic service included the associated anticipated financial and non-financial benefits of supporting the clinic's implementation and long-term sustainability. Anticipated benefits included the significant cost savings for the service due to the potential to decrease absenteeism rates, sick time, and associated WSIB costs resulting from getting paramedics back to work faster from having received timely, effective, and culturally competent mental health care. Other benefits within the *Inner*

Setting included helping members manage important life transitions like transferring to a new position either within the service or to another position within the City of Ottawa municipality, and assisting members with the transition to retirement and the associated psychological impacts of the loss of their personal identity. The clinic's implementation was also reported to provide a competitive advantage for recruiting new staff over other municipalities due to being recognized for their support of initiatives and resources to protect and maintain their members' mental health. Finally, participants were keen to support a clinic that maintains a clear and distinct separation from the service, which could result in increasing members' assurance of the confidentiality of their personal health information, decreasing distrust of leaders, and reducing public stigma, self-stigma, and label avoidance.

Strengths of the design of the clinic:

The findings also provided significant insight into mid-level and senior management and the union's perspectives of the clinic's strengths. A key strength included the clinic's alignment and fit alongside the paramedic service's values, current high-priority initiatives, policies (e.g., accessing care while on shift/off-shift depending on the severity of need), and processes. Other highlighted strengths of the *Intervention Characteristics* included the ability to provide timely and affordable mental health care, including culturally competent practices (e.g., hiring clinicians who specialize in first responder mental health) and policies. Knowledge of existing external services, if required, to better address paramedic needs (e.g., addictions services, family therapy) and navigate the mental health care system was seen as a vital component of the intervention's design. The choice of an accessible and centrally located brick-and-mortar clinic informed by paramedic feedback and the availability of training and education opportunities, in conjunction with strong formal and informal leadership support within the service, were viewed as a way to further

legitimize and encourage help-seeking behaviour and reduce public stigma, self-stigma, and label avoidance. Finally, if the clinic has the clinical capacity to provide services to both current and retired members, this will present another significant advantage over existing services. Participants emphasized that if an adapted model of the clinic can successfully implement the abovementioned items, this will go a long way in providing a stable foundation to support the clinic's long-term sustainability.

6.1.3. Recommendations to Operationalize the Clinic

Informed by the study findings and adoption of the TDF and CFIR frameworks, the following recommendations provide ways to address barriers to help-seeking and access to mental health care. These recommendations should inform the clinic's design, planning, policies, and procedures to encourage paramedics to access care within a safe and secure environment from a culturally-informed perspective. Operationalizing these recommendations and developing other innovative solutions are essential to proactively mitigate barriers to help-seeking. The following recommendations are divided into two categories to inform service development and delivery of internal services within the clinic and operationalize the clinic's set-up and paramedics' engagement.

Service development and delivery:

1) Provide clinic staff with sector-specific training so that all mental health professionals are culturally competent and understand first responder culture, stressors, and vocational requirements (e.g., going on multiple ride-alongs, spending time in the workplace to observe day-to-day stressors, and learning the terminology). Cultural competency also extends to administrative staff, including those answering the phone. Clinic policies should

also outline clear indicators of what constitutes an appropriate level of cultural competency and provide additional training and supervision to support its continued development.

2) Clinic staff should have an understanding and knowledge of existing external services (e.g., addictions services, family therapy) to better address individual needs, should additional expertise be required that is not available within the clinic.
3) Provide training and education opportunities for paramedics on the signs of emotional, behavioural, and physical aspects associated with stress and trauma, and knowledge of and skills to manage long-term mental health consequences associated with vocational requirements.
4) Include spouses and/or family in mental health treatment at the right time to help provide an understanding of the vocational requirements and provide caregivers with education about the signs, symptoms, and potential solutions for mental health challenges.
5) Review military approaches and models of stigma (e.g., Ben-Zeev et al., 2012) to inform how best to approach providing confidential mental health services.
6) The clinic should include the option of either in-person or virtual appointments (i.e., telehealth) to facilitate access to services.

Core recommendations for operationalizing the clinic set-up and engagement of paramedics:

1) Investigate and secure the necessary funding to sustain the clinic beyond the end of the grant funding period. Alternative funding sources (e.g., provincial or government sources, WSIB) should be considered to enable the clinic's long-term sustainability.
2) Relay feedback regarding emerging systemic barriers to senior leadership to reduce existing barriers and limit the emergence of new internal barriers to help-seeking within the service.

3) The clinic should be discreetly and centrally located away from hospitals with emergency departments, with accessible parking.
4) The clinic should be uniform-free, with the potential for certain exceptions (i.e., if attending an appointment while on-shift), to avoid potential triggering cues, to facilitate differentiating between work and personal time, to remove identifiers and protect confidentiality, and reduce the impact of rank.
5) The clinic's policies should allow individuals accessing care to enter the clinic alone and speak directly with their clinician, without interacting with other staff members. This is particularly important for individuals who have significant concerns regarding confidentiality.
6) Harness the use of existing resource-intensive (e.g., face-to-face engagement - presenting at PDP training sessions, regularly attending batch briefings) and less resource-intensive (e.g., briefings sent out by the Chief, disseminating information through the Peer Support Team, appointing trusted and well-respected champions, and including messaging within the internal newsletter) communication and engagement strategies within the service to disseminate information about the clinic and build rapport with service members.
7) Longer-term evaluation should include implementing a performance measurement framework. Identification of output and performance measures should also be embedded within the performance measurement framework to evaluate the clinic's efficacy and contribute toward continual improvement.

6.2. Critique of the TDF and CFIR Frameworks

While the TDF and CFIR provided valuable and useful theoretical frameworks to assess organizational readiness and behaviour change, a critique follows, including a discussion of the associated disadvantages of each framework.

6.2.1. TDF Critique

Despite the benefits of using the TDF in qualitative research, the amount of time and resources required to use the TDF was a significant challenge in incorporating the framework within this qualitative research study. Completing the interviews and data analysis, and allocating time for transcription completed by an external party (Capital Transcription Services Inc.) and verification of the transcripts' accuracy was time-consuming and, at times, resource-intensive. In addition, developing a thorough understanding of the TDF's domains and theoretical constructs before commencing data analysis aids in facilitating the process. However, without clearly defined definitions for each domain, developing a clear understanding of the theoretical content of the TDF's domains was more time and resource-intensive than the CFIR (Atkins et al., 2017; Phillips et al., 2015).

As per previous research, the lack of clearly defined operational definitions when applying the framework presented further challenges and opportunities for confusion when coding the data as certain domains appeared to overlap (Phillips et al., 2015). In these instances, it was difficult to determine where the boundaries separating where one domain ended, and the other began led to repetition and the potential for subjectivity (e.g., *Social/Professional Role and Identity* and *Social Influences*). Additional training or experience with the TDF and behaviour change theory in prior research, the inclusion of a health or clinical psychologist, or the completion of a graduate or post-graduate degree in psychology would have enabled a more thorough understanding of the TDF's

domains and constructs from the onset and would have expedited the data analysis process (Atkins et al., 2017; Francis et al., 2012; Phillips et al., 2015). In contrast, the CFIR's domains and constructs are relatively clearly defined. The availability of resources on www.cfirguide.org to help researchers develop a thorough understanding of how to use the framework was highly useful and user-friendly. The development of similar types of resources for the TDF would help facilitate researchers in applying the framework. The experiences encountered while using the TDF mirrored associated challenges faced by other researchers, particularly those who also found that the framework was both time and resource-intensive (Phillips et al., 2015). Another limitation of using the TDF included operationalizing the findings after having completed data analysis. Additional consideration is required to shape the results into usable recommendations to inform and implement strategies to mitigate barriers to help-seeking and access to mental health care. Notwithstanding the framework's limitations, the study's findings suggest that the TDF is a practical approach for providing a systematic, comprehensive, and theory-driven process to identify barriers and facilitators to behaviour change in healthcare settings (Francis et al., 2012; Phillips et al., 2015), which aligned with first responder, PSP, and military literature.

6.2.2. CFIR Critique

While the CFIR addressed all five core components of the implementation process and effectively evaluated participants' knowledge and understanding about the clinic, responses pertaining to participants' individual beliefs were difficult to classify within the framework's *Characteristics of Individuals* domain. As a result, these responses were coded within the *Knowledge and Beliefs About the Intervention* construct, which served as a catch-all category. However, the CFIR does not allow for an in-depth examination of participants' personal beliefs. It does not effectively capture the individual components, which was arguably the weakest

component of the framework. Nonetheless, using the CFIR to guide the evaluation was instrumental in facilitating the identification of multidimensional factors likely to impede the clinic's implementation and will aid in informing a larger-scale rollout within the paramedic, first responder, and broader public safety population. Integrating the CFIR's domains and constructs within evaluation tools can highlight critical factors that may hinder both the intervention's implementation and the intervention itself (Warner et al., 2018). In addition, the utility of the resources on www.cfirguide.org significantly facilitated the development of probing questions to elucidate essential factors that might impact the feasibility and long-term sustainability of the clinic (Breimaier et al., 2015).

6.2.3. Adoption of a Combined CFIR + TDF Approach

The adoption of a CFIR + TDF approach facilitated in effectively evaluating both individual and organizational barriers and facilitators of behaviour change. The CFIR complemented data collection at the organizational level, while the TDF was well adept at investigating the individual behavioural perspective. While some of the TDF's domains include factors associated with addressing the organizational-level factors (i.e., *Environmental Context and Resources, Social Influences, Social/Professional Role and Identity*, and *Behavioural Regulation*), the inclusion of the CFIR facilitated in capturing and producing a more robust evaluation of the organizational perspective of the paramedic service to assess the multiple aims of the study (Birken, Powell, Presseau, et al., 2017; Francis et al., 2012; Garbutt et al., 2018). However, the study would have further benefitted from the adoption of the CFIR + TDF approach had the CFIR interview guide been augmented to include the TDF to better assess the unit of analysis at the individual level. This additional step would have strengthened the CFIR's *Characteristics of Individuals* (*Knowledge and Beliefs About the Intervention*)

domain (CFIR Research Team Centre for Clinical Management Research, 2020). The inclusion of the CFIR + TDF approach also facilitated in producing more concrete and actionable findings to tailor the implementation of the intervention and to outline recommendations for other organizations seeking to replicate the model (Birken, Powell, Presseau, et al., 2017; Garbutt et al., 2018; Wensing et al., 2009, 2013). While acknowledging that the time required to apply the CFIR + TDF approach prospectively was a challenge, it could be anticipated that the use of these frameworks will streamline the amount of time and resources required to implement the clinic beyond the present study.

6.3. Positionality and Reflexivity of the Researcher

Ahead of commencing data collection, I participated in didactic and experiential training opportunities to develop effective qualitative interviewing skills. While fulfilling the coursework requirement in the first year of the MSc program, I completed the qualitative research methods module taught by Dr. Angel Foster (HSS 5902 Interdisciplinary Research Methods and Statistics). The coursework included the opportunity to review and critically appraise qualitative literature, which provided an introduction to various interview techniques and an overview of different methodological approaches to designing and conducting qualitative research. The course also included an in-class exercise to practice and observe interviewing techniques in front of and critiqued by our peers to identify associated strengths and weaknesses as interviewers. The exercise also facilitated in increasing our awareness of the impacts that our own beliefs as researchers, influenced by our social backgrounds and assumptions, may have on participants and the interview process. Thereafter, I participated in experiential interview training with Dr. Hatcher to practice administering the TDF interview topic guide ahead of the first interview. During this

training, I was able to participate in and observe Dr. Hatcher conducting a brief mock-interview and then practiced my skills as an interviewer.

Furthermore, I was able to draw on my almost ten years of clinical research experience conducting participant baseline and follow-up appointments on numerous randomized controlled trials and engaging with stakeholders in the areas of first responder and public safety mental health, suicide prevention, patient engagement, and smoking cessation. Throughout the years, I have been recognized as having the ability to forge connections with first responders, patient partners, and research participants alike. The combination of the abovementioned training, significant professional experience working with first responders, and a personal background growing up in a military family enabled me to develop the necessary skillset, cultural competency, knowledge, and sensitivity to the demands and progressively increasing levels of military command leadership to engage in research with paramedics in both frontline and senior leadership ranks. As such, I felt confident and appropriately prepared to commence participant recruitment and data collection.

As an individual raised in a military family, with four immediate relatives who are Veterans and a brother who has deployed and is still currently serving, I am intimately familiar with military culture, the difficulties of reacclimating post-deployment to Afghanistan, and the transition to civilian life upon retirement from the Canadian Armed Forces. These early life and professional experiences have significantly shaped and influenced my interest in military, Veteran, and public safety mental health. As such, I was aware of how my values, gender, attitudes, social background, and assumptions impacted my areas of research interest and on the research process itself. Reflecting on these factors allowed me to acknowledge my potential subjectivity and their influences throughout the data collection and analysis processes.

6.4. Significance and Future Directions

6.4.1. Significance of the Findings

Beyond informing the First Responder Operational Stress Injury Clinic's implementation, this study's results make significant contributions to public safety literature and inform our collective understanding of the associated barriers impeding access to mental health care within the paramedic population. These results will also help to inform the development of a theoretical framework of acceptability to assess the extent to which first responders who access mental health services find them to be acceptable. As such, these results will be instrumental in supporting the development of other tailored prevention strategies and access to evidence-based mental health interventions specific to paramedics' needs, with the hope of improving help-seeking behaviour and access to mental health care.

6.4.2. Implications for COVID-19

The study's results also offer important insights that may be especially salient in informing the continued response to the COVID-19 pandemic. Paramedics and other frontline workers have experienced even higher work overload, in conjunction with exacerbating pre-existing stressors, and the litany of new challenges that have emerged as the pandemic has evolved. Such stressors include but are not limited to: staffing shortages, high-risk exposure to SARS-CoV-2, personal and familial contagion, isolation, quarantine, insufficient resources, and burnout (Carleton, Afifi, et al., 2020; Carleton, Afifi, Turner, Taillieu, Duranceau, et al., 2018; Heber et al., 2020). Within this context, these results may help inform concerted efforts to launch tailored interventions and services specific to this population to better protect and sustain their mental health and well-being over the short-and-long-term as COVID-19 continues to unfold.

6.4.3. Recommendations for Organizations to Replicate the Study

The following section includes a series of recommendations for other paramedic services and related first responder or public safety organizations who wish to replicate the study within their setting.

1) Complete the assessment in collaboration with researchers with the requisite training and experience in using the TDF and behaviour change theory. Prior research experience, training in health or clinical psychology, or the completion of a graduate or post-graduate degree in psychology are assets.
2) Hire a dedicated full-time project manager to oversee the development, implementation, and management of the project. It is essential that this individual remains on the project throughout the entirety of the initiative. Consideration of staff continuity is integral due to the complexity of conducting qualitative research supported by the TDF and CFIR frameworks.
3) Secure the necessary funding and resources to allow for continued work in the next phase of the project (i.e., implementing the clinic). Failure to secure guaranteed funding and resources risks discontinuation of the initiative.
4) Select and maintain a well-respected and trusted champion from either formal or informal leadership to engage members and promote the initiative within the organization.
5) The intervention must be tailored to fit within the respective organizational context. It is essential for first responders and/or public safety personnel to buy-in and believe in the intervention's value.

6) Key perspectives in the qualitative interviews should include members who are supportive and unsupportive of mental health care, and individuals who have previously sought treatment for mental health disorders.
7) Develop, implement, and maintain a comprehensive communications plan.
8) Provide compensation for members' time to participate in the qualitative interviews.
9) Interviewers should practice reflective memoing after each interview to understand how their values, attitudes, social background, experience, and assumptions impact participants and the interview process.

6.4.4. Next Steps

The next steps include submitting the TDF manuscript in Chapter 4 to the *Implementation Science* journal in March 2021. Thereafter, a manuscript including the CFIR paramedic results included in Chapter 5 will be drafted within the context of the broader parent study to present the results alongside police and fire participant data. The intended target journal for this pending manuscript also includes the *Implementation Science* journal. The intent with publishing these manuscripts is to inform researchers, mental health professionals, policy makers, PSP, and PSP organizations about barriers and facilitators to help-seeking and accessing mental health care to inform the development and implementation of tailored mental health services for the first responder population. The intent also includes filling existing gaps in research regarding help-seeking behaviour and access to mental health care in first responder populations. In addition to these manuscripts, I have attended regional and national academic conferences in Canada and have utilized these opportunities to disseminate the paramedic findings within this thesis, and have shared the preliminary results with research, academic, public safety, and government organizations in various venues.

6.5. Limitations

While the present study provides a snapshot of the Ottawa Paramedic Service from a pre-COVID-19 standpoint, the presence of several limitations that arose will be useful in guiding future research. While the study was a subset of a larger trial, including police officers and firefighters, the sample size of paramedics included in this study is small. However, the semi-structured interviews provided an opportunity to gain more in-depth and thorough responses from paramedics. The findings are also reflective of members' perspectives within the paramedic service in Ottawa, Canada, and are therefore not generalizable to the broader Canadian paramedic population. As a formative evaluation, the results provided an organization-specific assessment and recommendations that will be used to implement the clinic in Ottawa. While some of the lessons learned can be utilized to facilitate the development of mental health services across the country, replicating the study within other first responder organizations is advisable to help inform mental health service delivery and identify organization-specific barriers to mental health care.

Given the rapid expansion and adoption of virtual treatment interventions (i.e., telehealth) throughout the COVID-19 pandemic, and the relative cost of the technology to connect patients to providers, researchers should also consider its inclusion in the expansion and/or replication of the model across first responder organizations and the broader PSP sectors. Moreover, assessing whether virtual care is an effective conduit for decreasing barriers to help-seeking and increasing access to mental health care across PSP sectors, specifically to help mitigate barriers, would be particularly beneficial for members who have significant concerns regarding privacy and confidentiality. The adoption of virtual treatment options would also help expand access for PSP in rural and remote locations and/or in provinces with fewer mental health professionals who have the requisite training, skills, and cultural competency necessary to work with this population.

Due to scarcity of funding sources, future research should be conducted to investigate the effectiveness of the clinic using three models of implementation varying in intensity (i.e., high, medium, and low intensity) and levels of support to facilitate in determining the cost and cost-effectiveness of each approach (Reilly et al., 2018). Thereafter, an economic analysis should be conducted to determine the total cost of delivering the "high," "medium," and "low" intensity interventions to guide the clinic's long-term sustainability and potential expansion of the model across Canada. Adopting this method would help inform and produce actionable findings to enable policy makers who seek cost-effectiveness evidence-based approaches to address mental health care in high-risk and vulnerable populations (Reilly et al., 2018). This approach would, therefore, provide a more robust proposal for continued funding.

6.6. *Conclusion*

The rich, complex, and nuanced findings in this study highlighted the pervasive and troubling nature of several key barriers to implementing a First Responder Operational Stress Injury Clinic. Innovative solutions available in both official languages and research informed by paramedics and public safety stakeholders are essential in addressing and overcoming these barriers and altering help-seeking behaviour and access to mental health care. These results are especially relevant and provide a helpful framework that can be tailored to healthcare professionals and other essential frontline workers during the remainder of and after the COVID-19 pandemic. This work is a crucial step towards providing the most appropriate care to the right people at the right time.

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Appendices

Appendix A - TDF Interview Topic Guide

Introduction:
I'd like to ask you some questions regarding your thoughts about mental health and mental health care. Please feel free to be totally honest and forthcoming in your answers. The more we know about your experiences in this study, the more helpful your feedback will be in our efforts to improve the mental health of our first responders.

Frontline Qualitative Interview Questions:

1. Could you tell me what you know about mental health problems in first responders?
    a. Has your mental health affected your job? Has your job affected your mental health?
2. How would you recognize if a colleague had mental health problems?
    a. Would you encourage them to get help from their family doctor?
    b. Would you see it as your responsibility to encourage a colleague to access help?
3. Do you believe that mental health problems are treatable?
    a. Do you feel adequately trained to recognize mental health problems in colleagues?
4. What factors would encourage you or your colleagues to attend the First Responder Operational Stress Injury (OSI) Clinic?
5. How should we book appointments at the First Responder OSI Clinic?
6. Where should a First Responder OSI clinic be situated?
7. What staff should be employed at the First Responder OSI Clinic? If access and resources for mental health care were unlimited who would you prefer to see? [a peer, social worker, psychotherapist, psychologist, or psychiatrist?] Why?
    a. What is your understanding of the different roles of different mental health care providers?
    b. Would your preference depend on your lived experience and current mental health state?
    c. What type of mental health professional would you have least preference for seeing? Why?
8. Should a First Responder OSI Clinic be 'uniform free'?
9. How could we make it less stressful to be seen at the First Responder OSI Clinic?
10. How do we remind people that First Responder OSI Clinic is an option for help?
11. Should we send reminders to first responders before their appointment at the First Responder OSI Clinic?
12. Have you experienced any issues accessing mental health care? If so, what issues have you experienced?
13. Have you noticed any concerns from your coworkers in regards to accessing mental health care?
14. What do you think are the main barriers [such as, but not limited to: financial barriers, insurance barriers, stigma-based barriers, structural/functional barriers or psychological barriers] to accessing mental health care for members in your service?

    a. How would you describe the level of stigma and the general beliefs surrounding mental health and mental health treatment?
15. What do you think the service needs in order to address mental health effectively from an individual perspective and from an organizational perspective? [Changes in finance/funding, changes in culture, changes in policies, changes in providers, etc.]
16. Do you believe mental health professionals who serve first responders need job specific mental health training and knowledge in order to appropriately treat First Responders?
    a. If so, what training/knowledge do you think would be required?
17. Branding:
    a. Do you know what Operational Stress Injury (OSI) means? What is your familiarity with this term?
    b. Do you have any opinions on this term in regards to first responders?
    c. Which of these three branding options do you think is the most appropriate? [First Responder Mental Health Clinic/First Responder Mental Health Research Clinic/First Responder Operational Stress Injury (OSI) Clinic?]
    d. Do you have any other suggestions?
18. Would you prefer if mental health services were provided during work hours, after work hours, or both?
    a. How would your work schedule affect your access to mental health services?
19. What is your knowledge or understanding of the services policies related to sick leave?
    a. How available is this information to you?
20. Do you have any other comments or suggestions?
    a. Is there anyone else we should be speaking to?
    b. Should we include families or other support systems?

Appendix B - CFIR Interview Topic Guide

Introduction:
I'd like to ask you some questions regarding your thoughts about mental health and mental health care and the implementation of a First Responder Operation Stress Injury (OSI) Clinic. Please feel free to be totally honest and forthcoming in your answers. The more we know about your experiences in this study, the more helpful your feedback will be in our efforts to improve the mental health of our first responders.

Mid-Senior Level Management and Union Qualitative Interview Questions:

1. What do you know about the intervention or its implementation?
2. What kind of supporting evidence or proof is needed about the effectiveness of the First Responder Operational Stress Injury (OSI) Clinic, to get staff on board?
    a. Co-workers? Administrative leaders?
3. How does the intervention compare to other similar existing programs in your setting?
    a. What advantages does the intervention have compared to existing programs?
    b. What disadvantages does the intervention have compared to existing programs?
4. How does the intervention compare to other alternatives that may have been considered or that you know about?
    a. What advantages does the intervention have compared to these other programs?
    b. What disadvantages does the intervention have compared to these other programs?
5. Is there another intervention that people would rather implement?
    a. Can you describe that intervention?
    b. Why would people prefer the alternative?
6. What kinds of changes or alterations do you think you will need to make to the intervention so it will work effectively in your setting?
    a. Do you think you will be able to make these changes? Why or why not?
7. Who will decide (or what is the process for deciding) whether changes are needed to the intervention so that it works well in your setting?
    a. How will you know if it is appropriate to make any changes?
8. Are there components that should not be altered?
    a. Which ones should not be altered?
9. What supports, such as online resources, marketing materials, or a toolkit, are available to help you implement and use the intervention?
    a. How do you access these materials?
10. What costs will be incurred to implement the intervention?
11. To what extent is staff aware of the needs and preferences of the individuals being served by your organization?
12. How well do you think the intervention will meet the needs of the individuals served by your organization?
    a. In what ways will the intervention meet their needs? (e.g., improved access to services? Reduced wait times? Help with self-management? Reduced travel time and expense?)
13. How do you think the individuals served by your organization will respond to the intervention?

14. What barriers will the individuals served by your organization face to participating in the intervention?
15. To what extent would implementing the intervention provide an advantage for your organization compared to other organizations in your area?
    a. Is there a competitive advantage?
    b. Is there something about the intervention that would bring more individuals into your organization, instead of another one in your area?
16. What kind of local, state, or national performance measures, policies, regulations, or guidelines influenced the decision to implement the intervention?
    a. How will the intervention affect your organization's ability to meet these measures, policies, regulations, or guidelines?
17. What kinds of infrastructure changes will be needed to accommodate the intervention?
    a. Changes in scope of practice? Changes in formal policies? Changes in information systems or electronic records systems? Other?
    b. What kind of approvals will be needed? Who will need to be involved?
    c. Can you describe the process that will be needed to make these changes?
18. Is there a strong need for this intervention?
    a. Why or why not?
    b. Do others see a need for the intervention?
19. How essential is this intervention to meet the needs of the individuals served by your organization or other organizational goals and objectives?
20. How well does the intervention fit with your values and norms and the values and norms within the organization?
    a. Values relating to interacting with individuals served by your organization, e.g., shared decision making vs. being more directive?
    b. Values related to referring to outside vendor-based programs vs. providing services by in-house staff?
21. How well does the intervention fit with existing work processes and practices in your setting?
    a. What are likely issues or complications that may arise?
22. Can you describe how the intervention will be integrated into current processes?
    a. How will it interact or conflict with current programs or processes?
23. What kinds of high-priority initiatives or activities are already happening in your setting?
    a. What is the priority of getting the intervention implemented relative to other initiatives that are happening now?
    b. Will the implementation conflict with these priorities?
    c. Will the implementation help achieve (or relieve pressure related to) these priorities?
24. To what extent does your organization/unit set goals for current programs/initiatives?
    a. How are goals communicated in the organization? To whom are they communicated?
    b. Can you give an example of a goal? How and to whom is it communicated?
    c. Are changes made based on how things are going? Can you give an example?
25. What level of endorsement or support have you seen or heard from leaders?
    a. Who are these leaders and how has this affected things so far? Going forward?
26. Do you think the intervention will be effective in your setting?

    a. Why or why not?
27. How do you feel about the intervention being used in your setting?
    a. How do you feel about the plan to implement the intervention in your setting?
    b. Do you have any feelings of anticipation? Stress? Enthusiasm? Why?
28. Who are the key influential individuals to get on board with this implementation?
29. What are influential individuals saying about the intervention?
    a. Who are these influential individuals?
    b. To what extent will they influence others' use of the intervention? The success of the implementation?
30. Who are the key individuals to get on board with the intervention?
    a. To encourage individuals to use the intervention? To help with implementation?
31. How will you or your colleagues communicate to the individuals that are served by your organization about the intervention?
    a. How will they participate in the intervention?
    b. How will they access the intervention?

Appendix C - COREQ Checklist

COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
Personal characteristics			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	33
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	134-135
Occupation	3	What was their occupation at the time of the study?	135
Gender	4	Was the researcher male or female?	33
Experience and training	5	What experience or training did the researcher have?	134-135
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	N/A
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	N/A
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	134-135
Domain 2: Study design			
Theoretical framework			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	37
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	32
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	32
Sample size	12	How many participants were in the study?	30
Non-participation	13	How many people refused to participate or dropped out? Reasons?	N/A
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	35
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	N/A
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	36
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	28
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	N/A
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	36
Field notes	20	Were field notes made during and/or after the inter view or focus group?	36
Duration	21	What was the duration of the inter views or focus group?	35
Data saturation	22	Was data saturation discussed?	31-32
Transcripts returned	23	Were transcripts returned to participants for comment and/or	N/A

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
Data analysis			
Number of data coders	24	How many data coders coded the data?	38
Description of the coding tree	25	Did authors provide a description of the coding tree?	N/A
Derivation of themes	26	Were themes identified in advance or derived from the data?	40
Software	27	What software, if applicable, was used to manage the data?	36
Participant checking	28	Did participants provide feedback on the findings?	N/A
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	86-119
Data and findings consistent	30	Was there consistency between the data presented and the findings?	86-119
Clarity of major themes	31	Were major themes clearly presented in the findings?	86-119
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	86-119

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

Once you have completed this checklist, please save a copy and upload it as part of your submission. DO NOT include this checklist as part of the main manuscript document. It must be uploaded as a separate file.

Appendix D - TDF Data Analysis Plan

Thesis Title: "Implementation of a First Responder Operational Stress Injury Clinic Using TDF-II and CFIR Frameworks: A paramedic perspective"
MSc Student: Valerie Testa

1.0: Purpose

The implementation science framework detailed in this data analysis plan is the *Theoretical Domains Framework (TDF)*. This document aims to provide an outline of the phases included in conducting the TDF component of this thesis' qualitative analysis. The following data analysis plan is a detailed version of an adaptation of the TDF Data Analysis Plan standard operating procedure (FRDM103) from the parent study.

2.0: Analysis Overview

The data set (i.e., interview transcripts) will be analyzed deductively, using the TDF to develop a framework for a content analysis. Coders (VT – all interviews; DB – pilot interviews) will code the transcripts into the 14 domains of the TDF.

The analysis will be conducted using the a priori codes of the TDF framework. The primary purpose of the analysis is to clarify critical frontline paramedic barriers and facilitators to implementing a First Responder Operational Stress Injury (FROSI) Clinic using the TDF. The intent of the analysis is to identify factors which influence the behaviour of paramedics with regard to how they access and seek mental health care to inform the implementation of the FROSI Clinic. An important component of this analysis includes assessing whether the TDF framework's domains (i.e., a ready-made template) accurately classify the themes emerging from the interviews. If new emergent themes are consistently generated, beyond those included in the TDF, they may be added to the analysis (Namey et al., 2008).

3.0: Research Questions to be Investigated

The analysis will inform three of this thesis' research questions:

6) What are paramedic treatment preferences for accessing and seeking mental health care in a FROSI Clinic?
7) What factors impact paramedic access to mental health care?
8) What factors impact the acceptability of a FROSI Clinic?

The TDF framework is used to target specific behaviour (i.e. accessing mental health care), while also accounting for the complexity of the setting in which an intervention (i.e. the FROSI Clinic) is being implemented (French et al., 2012). This thesis includes the application of the TDF to clarify barriers and facilitators that impact paramedic help seeking behaviour to access mental health care to influence the acceptable and successful implementation of a First Responder Operational Stress Injury Clinic. The TDF analysis will inform the abovementioned research questions by examining the 14 domains of the framework:

1) *Knowledge* consists of "an awareness of the existence of something" (Atkins et al., 2017). Knowledge (including knowledge of the condition/scientific rationale), procedural knowledge, and knowledge of the task environment are constructs within the *knowledge* domain (Cane et al., 2012).

2) *Skills* consists of "an ability or proficiency acquired through practice" (Atkins et al., 2017). Skills, skill development, competence, ability, interpersonal skills, practice, and skill assessment are constructs within the *skills* domain (Cane et al., 2012).
3) *Social/professional role and identity* consists of "a coherent set of behaviours and displayed personal qualities of an individual in a social or work setting" (Atkins et al., 2017). Professional identity, professional role, social identity, identity, professional boundaries, professional confidence, group identity, leadership, and organizational commitment are constructs within the *social/professional role and identity* domain (Cane et al., 2012).
4) *Beliefs about capabilities* consists of "acceptance of the truth, reality or validity about an ability, talent or facility that a person can put to constructive use" (Atkins et al., 2017). Self-confidence, perceived competence, self-efficacy, perceived behavioural control, beliefs, self-esteem, empowerment, and professional confidence are constructs within the *beliefs about capabilities* domain (Cane et al., 2012).
5) *Optimism* consists of "the confidence that things will happen for the best or that desired goals will be attained" (Atkins et al., 2017). Optimism, pessimism, unrealistic optimism, and identity are constructs within the *optimism* domain (Cane et al., 2012).
6) *Beliefs about consequences* consists of "acceptance of the truth, reality, or validity about outcomes of a behaviour in a given situation" (Atkins et al., 2017). Beliefs, outcome expectancies, characteristics of outcome expectancies, anticipated regret, and consequents are constructs within the *beliefs about consequences* domain (Cane et al., 2012).
7) *Reinforcement* consists of "increasing the probability of a response by arranging a dependent relationship, or contingency, between the response and a given stimulus" (Atkins et al., 2017). Rewards (proximal/distal, valued/not valued, probable/improbable), incentives, punishment, consequents, reinforcement, contingencies, and sanctions are constructs within the *reinforcement* domain (Cane et al., 2012).
8) *Intentions* consist of "a conscious decision to perform a behaviour or a resolve to act in a certain way" (Atkins et al., 2017). Stability of intentions, stages of change model, and transtheoretical model and stages of change are constructs within the *intentions* domain (Cane et al., 2012).
9) *Goals* consist of "mental representations of outcomes or end states that an individual wants to achieve" (Atkins et al., 2017). Goals (distal/proximal), goal priority, goal/target setting, goals (autonomous/controlled), action planning, and implementation intention are constructs within the *goals* domain (Cane et al., 2012).
10) *Memory, attention and decision processes* consist of "the ability to retain information, focus selectively on aspects of the environment and choose between two or more alternatives" (Atkins et al., 2017). Memory, attention, attention control, decision making, cognitive overload/tiredness are constructs within the *memory, attention and decision processes* domain (Cane et al., 2012).
11) *Environmental context and resources* consist of "any circumstance of a person's situation or environment that discourages or encourages the development of skills and abilities, independence, social competence and adaptive behaviour" (Atkins et al., 2017). Environmental stressors, resources/material resources, organizational culture/climate, salient events/critical incidents, person x environment interaction, barriers and facilitators are constructs within the *environmental context and resources* domain (Cane et al., 2012).

12) *Social influences* consist of "those interpersonal processes that can cause individuals to change their thoughts, feelings, or behaviours" (Atkins et al., 2017). Social pressure, social norms, group conformity, social comparisons, group norms, social support, power, intergroup conflict, alienation, group identity, and modelling are constructs in the *social influences domain* (Cane et al., 2012).
13) *Emotion* consists of "a complex reaction pattern, involving experiential, behavioural, and physiological elements, by which the individual attempts to deal with a personally significant matter or event" (Atkins et al., 2017). Fear, anxiety, affect, stress, depression, positive/negative affect, and burn-out are constructs within the *emotion* domain (Cane et al., 2012).
14) *Behavioural regulation* consists of "anything aimed at managing or changing objectively observed or measured actions" (Atkins et al., 2017). Self-monitoring, breaking habit, and action planning are constructs within the *behavioural regulation* domain (Cane et al., 2012).

4.0: Data Included in the Analysis

Study data included in the analysis include the transcripts of five semi-structured qualitative interviews, field notes, and demographic statistics. Participants include five Primary Care Paramedics from the Ottawa Paramedic Service who were categorized into their primary sub-group category: members who have sought treatment for mental health disorders; peer support group members; and frontline staff. Participants typically fit into two or more subcategories; however, their primary subcategory was recorded in the demographic statistics.

Integration of different data collection methods:

The present thesis does not include other data collection methods beyond the semi-structured qualitative interviews to augment the analysis. The sole quantitative data includes participant demographic statistics.

5.0: Individuals Involved in the Analysis and their Roles

This document applies to Valerie Testa (VT – for the analysis of all five interviews as the primary coder) and Alexandria (Dria) Bennett (AB – for the secondary analysis of the five TDF interviews in the first level coding) who are completing the coding, in full or in part, of the paramedic interviews. Dr. Simon Hatcher (SH), will participate as the third-party member if a disagreement requires the consultation of an arbitrator.

6.0: Coding

Rules for applying the codes to the data:

The coding of the data will follow the rules outlined in the coding guideline (i.e., the TDF Codebook), which includes explicit statements for each of the TDF domains (Atkins et al., 2017). These statements provide guidance on the strength of confidence that the coded text denotes where there is a probability that change is likely to be helpful in changing behaviour (Atkins et al., 2017). Atkins et al. (2017) recommend that transcript text be coded into the TDF domains "that best reflect the key theme" and to avoid the temptation to code the text into one domain. The authors also advise that coding data into other domains enable the division of contextual factors that influence behaviour and identify behaviours which are amenable to change (Atkins et al., 2017).

If new codes and themes emerge during the analysis, beyond those included in the TDF, they will be added to the codebook. If and when a new code is identified, a rule for inclusion should be developed, in addition, to sample data (Saldana, 2009) and included in the TDF Codebook document.

What gets coded (i.e., amounts of data to code):
The amount of data that is coded (i.e., every detail versus only the most salient portions) is dependent on, as described by Saldana (2009), not just focusing on sufficient qualitative but rather sufficient quality of data with which to work with. Saldana (2009) recommends that "knowing and feeling what is important in the data record and what is not" is most important in order to "code what rises to the surface – 'relevant text.'"

Content of what gets coded:
Coded content includes activities and perceptions identified by study participants, and interviewer observer comments in field notes (Saldana, 2009).

Reconciling discrepancies:
Reconciliation of discrepancies of the coding is detailed below in Phase 4.

Data reduction techniques:
Due to the sample size of the TDF paramedic participants, data reduction techniques are not being applied within this thesis.

7.0: Phases of Analysis
The phases of analysis follow the steps for conducting a content analysis outlined by Elo & Kyngäs (2008) and Vaismoradi, Turunen, & Bondas (2013), in addition to the inclusion of pilot coding.

Identification of a Thematic Framework
The first component of a deductive analysis includes the identification of a thematic framework (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005; Vaismoradi et al., 2013). This was selected a priori and is the Theoretical Domains Framework.

Phase 1: Preparation (i.e., Familiarization with the Data)
- The first phase includes researchers involved in the analysis (VT and AB) immersing themselves with the data to familiarize themselves with the complexity and scope of the interviews. Familiarization with the data is essential regardless of which member of the research team completed the data collection (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005; Vaismoradi et al., 2013). Familiarization with the data includes reviewing and reading notes and transcripts line by line.
- Lincoln & Guba (1985) and Sandelowski (1995) recommend during the familiarization process that the researcher(s) document their theoretical and reflective thoughts. This includes documenting values, interests, and emerging/developing insights about the topic (Lincoln & Guba, 1985; Sandelowski, 1995). Lincoln & Guba (1985) also recommend that the researcher(s) make notes regarding ideas about coding that can be referenced in subsequent phases of the analysis.
- The TDF transcripts will be coded by two independent coders (VT and DB).

- The TDF Codebook will be updated iteratively during the analysis if and when additional codes emerge.

Phase 2: Pilot Coding

- VT and AB will complete pilot coding independently of one pre-agreed transcribed interview from the parent study (which includes police officers, firefighters, and paramedics), P001 a police interview, using NVivo 12 Pro. Pilot coding will include indexing sections of the transcript to codes which reflect relevant TDF domains, and any additional codes identified in Phase 1.
- Thereafter, the two coders will complete a second interview to ensure that there is ample comfort with the coding strategy that has been developed.

Phase 3: Organizing (i.e., Searching for Themes)

- This phase of analysis will be conducted by two independent coders (VT – primary coder, and AB – secondary coder) to identify content (i.e., words, phrases, sentences) that reflect content, themes, units of meaning within one or more of the TDF's 14 domains using NVivo 12 Pro (Atkins et al., 2017; Elo & Kyngäs, 2008; Vaismoradi et al., 2013).
- Each utterance will be coded into the relevant TDF domain(s) and will be guided by the coders understanding of the TDF and relevant domain(s) (Sullivan et al., 2017). It is important to note that some text may seem to fit into multiple domains (Atkins et al., 2017).

Phase 4: Reconciliation of Coding

- The two independent reviewers (VT and AB) will meet to discuss coding, challenges experienced, level of agreement between the reviewers regarding how the coding fits within the themes, and resolve discrepancies (Atkins et al., 2017). The process of agreement includes statistical agreement and consensus coding, resulting with a blend of the two approaches. The process includes:
    - *1) Statistical Agreement:*
        - Combining datasets in NVivo 12 Pro per participant and running a *coding comparison query*. The coding comparison query will compare the coding completed by the two reviewers (VT and AB) to measure the inter-rater reliability or degree of agreement (i.e., initial level of consensus).
        - The Kappa coefficient will be used to assess inter-rater reliability (Atkins et al., 2017; Patey et al., 2012). The NVivo software provides users with the Kappa coefficient to assess inter-rater reliability.
        - The level of agreement needed between the reviewers will be a minimum Kappa value of *0.40* (i.e., *fair to good agreement*):

Kappa Value	**Interpretation**
Below 0.40	Poor agreement
0.40 – 0.75	***Fair to good agreement***
Over 0.75	Excellent agreement

        - **Atkins et al., (2017) reported that a kappa score greater than 0.6 across each TDF domain is considered an acceptable level of reliability. PABAK kappa which corrects for negative agreement when Cohen's Kappa is marginal can also be used.*

- Statistical agreement can either be completed at the beginning of the analysis of the sample of interviews to achieve a level of agreement between coders or it can also be punctuated throughout the analysis.

- *2) Consensus Coding:*
  - To facilitate consensus between both coders, after having coded independently, each coder should provide an explanation of their understanding of the coded text's key meaning and to provide a justification for their rationale in selecting the domain(s). Each coder should also discuss why the text should *not* be coded in another domain. This includes going through code by code.
  - VT will record all disagreements and decisions made and disagreements in an audit trail document – refer to Table 1 template below.

- Disagreements:
  - All disagreements are to be formally resolved at each phase and will be recorded in an audit trail in Excel to document the decision-making process ("Disagreement Log.TDF Audit Trail.VT" document).
  - If a disagreement cannot be resolved, SH, the third party/arbitrator, will provide a critique of the analysis.
  - If agreement on assigning text to an individual domain cannot be reached, consensus can be attained by assigning the text to all the domains identified by both VT and AB.
  - Common discrepancies:
    - Coding the same text to different TDF domains.
    - Quotes may fit into multiple TDF domains. In these cases, if VT and AB do not reach consensus on assigning the text to a single TDF domain, as noted above, it is advised to code the text into all relevant TDF domains.
- Additional codes that emerge during Phase 4 will be added to the TDF Codebook.

Table 1. Excel "Disagreement Log. TDF Audit Trail.VT" document set up

Participant ID	Interview Type	Domain	Quote	Agreement	Recode In	Coding Questions	Cohen's Kappa	Critique by 3rd Party Reviewer (Y/N)	3rd Party Agreement
P001	TDF	Knowledge	"X…Y"						
		Skills	"X…Y"						
		Social/Professional Role and Identity	"X…Y"						
		Beliefs about Capabilities	"X…Y"						
		Optimism	"X…Y"						
		Beliefs about Consequences	"X…Y"						
		Reinforcement	"X…Y"						
		Intentions	"X…Y"						
		Goals	"X…Y"						
		Memory, Attention and Decision Processes	"X…Y"						
		Environmental Context and Resources	"X…Y"						
		Social Influences	"X…Y"						
		Emotion	"X…Y"						

		Behavioural Regulation	"X…Y"						

Phase 5: Frequency

- Once completed the analysis, VT will save a copy of the coded text for each TDF domain (i.e., frequency) that has been coded in the transcript in a Word document. Each domain will be saved as a separate Word document per participant.

Phase 6: Generating Specific Beliefs

- VT will link responses with specific beliefs that appear in one or more transcripts to generate belief statements. The intent is to generate statements which convey a meaning which is common across multiple utterances. These statements are intended to capture the core thought expressed by participants (Francis et al., 2009; Islam et al., 2012; Sullivan et al., 2017).
- Similar statements made by participants are to be grouped under the same belief statement. As such, beliefs surrounding not being able to access mental health care will be classified as barriers. Beliefs surrounding being able to access mental health care will be classified as facilitators.

Phase 7: Relevant TDF Domains

- After belief statements have been generated, Phase 7 includes the identification of relevant theoretical domains (Islam et al., 2012). Not all of the TDF's domains will be relevant to the present study.
- To determine whether a domain is considered to likely be relevant for changing the target behaviour (i.e., accessing mental health care), it must contain specific beliefs that might be barriers or facilitators for changing the target behaviour and fulfill the following criteria (Atkins et al., 2017; Brussieres et al., 2012; Islam et al., 2012; Patey et al., 2012; Sullivan et al., 2017):
    - 1) Have a relatively high frequency of specific beliefs;
    - 2) Presence of conflicting beliefs; and/or
    - 3) Evidence of strong beliefs which may impact behaviour.

Phase 8: Reporting the Findings

- Atkins et al. (2017) note that the findings of TDF-based interviews are reported in both tables and text in order to provide a detailed and transparent description of the factors influencing implementation.
- Tables include: quotes from transcripts, summary statements/belief statements from these quotes, frequency counts, and/or emerging themes (Atkins et al., 2017). Table 2 includes the template to be used to report the findings (Patey et al., 2012).

Table 2. Table Template – Reporting the Findings (Patey et al., 2012)

"Summary of belief statements and sample quotes from anesthesiologist and surgeons assigned to the theoretical domains identified as relevant"

Domains	Specific belief	Sample quote	Frequency out of X# (16 in example)
Social/professional role & identity	My colleagues agree/do not agree with my opinion about pre-op testing.	'…I mean all my colleagues would agree with my general principles.' (A1)	9

		'I know my anesthesiologists…no I have had surgeries cancelled where we the patient comes in.' (S3)	
		'Many of my colleagues have a preference for doing more pre-operative investigation than I do.' (A6)	6
Beliefs about capabilities	It's very easy for me to order tests	'I pick an order sheet from the desk, I write it down and it happens…' (A1)	16

8.0: Data Saturation

- The initial intent was to conduct concurrent data analysis and coding as an iterative process. The stopping criterion for data saturation had, prior to data collection, been defined as three interviews with no new emerging themes after the third consecutive interview (Francis et al., 2010). However, due to delays with the transcription contract, data analysis and coding occurred after the completion of the semi-structed qualitative interviews.
- Data saturation will be assessed based on interview type (i.e. TDF versus CFIR) rather than within each sample group (i.e. previously sought treatment for mental health, member of peer support, etc.). Data saturation will be reached when the addition of new data does not produce any new barriers or facilitators.

9.0: Reliability of Content Analysis

In order to minimize coding errors due to human nature, generally 80% is an acceptable margin for reliability. The following criteria support the reliability of content analysis:

1. *Stability*: the tendency for coders to consistently re-code the same data in the same way over time.
2. *Reproducibility*: the tendency for a group of coders to classify categories in the same way.
3. *Accuracy*: the extent to which the classification of text corresponds to a standard or norm statistically.

10.0: Reporting Findings

- The reporting of the findings will adhere to the Consolidated Criteria for Reporting Qualitative research (COREQ) (Tong et al., 2007).

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Appendix E - TDF Codebook

Domains	Definition	Construct	Inclusion Example *Note. [A], action; [C], context; [T], time; [Ta], target*
1) Knowledge	An awareness of the existence of something	Knowledge (including knowledge of condition/scientific rationale); procedural knowledge, knowledge of task environment	I am aware of the content and objectives of [innovation] I know the content and objectives of [innovation] I am familiar with [innovation] I know how to do a particular task
2) Skills	An ability or proficiency acquired through practice	Skills, skills development, competence, ability, interpersonal skills, practice, skill assessment	I have been trained how to [A] in [C, T] with [Ta] I have the proficiency to [A] in [C, T] with [Ta] I have the skills to [A] in [C, T] with [Ta] I have practiced [A] in [C, T] with [Ta]
3) Social/ professional role and identity	A coherent set of behaviours and displayed personal qualities of an individual in a social or work setting	Professional identity, professional role, social identity, identity, professional boundaries, professional confidence, group identity, leadership, organisational commitment	[A] in [C, T] with [Ta] is part of my work as a [profession] As a [profession], it is my job to [A] in [C, T] with [Ta] It is my responsibility as a [profession] to [A] in [C, T] with [Ta] Doing [A] in [C, T] with [Ta] is consistent with my [profession]
4) Beliefs about capabilities	Acceptance of the truth, reality, or validity about an ability, talent, or facility that a person can put to constructive use	Self-confidence, perceived competence, self-efficacy, perceived behavioural control, beliefs, self-esteem, empowerment, professional confidence	*Self-efficacy* I am confident that I can [A] in [C, T] with [Ta] even when [Ta] is not motivated I am confident that I can [A] in [C, T] with [Ta] even when there is little time *Perceived behavioral control* I am confident that if I wanted I could [A] in [C, T] with [Ta] How much control do you have over [A] in [C, T] with [Ta] For me, [A] in [C, T] with [Ta] is… (Very difficult – very easy)
5) Optimism	The confidence that things will happen for the best or that desired goals will be attained	Optimism, pessimism, unrealistic optimism, identity	*Optimism* With regard to [A] in [C, T] with [Ta] in uncertain times, I usually expect the best With regard to [A] in [C, T] with [Ta] I'm always optimistic about the future With regard to [A] in [C, T] with [Ta] overall, I expect more good things to happen than bad *Pessimism* With regard to [A] in [C, T] with [Ta] if something can go wrong, it will With regard to [A] in [C, T] with [Ta] I hardly ever expect things to go my way With regard to [A] in [C, T] with [Ta] I rarely count on good things happening to me

6) Beliefs about consequences	Acceptance of the truth, reality, or validity about outcomes of a behaviour in a given situation	Beliefs, outcome expectancies, characteristics of outcome expectancies, anticipated regret, consequences	*Attitudes* For me, [A] in [C, T] with [Ta] is… (Useless – useful) For me, [A] in [C, T] with [Ta] is… (bad – good) *Outcome expectancies* If I [A] in [C, T] with [Ta] it will benefit public health If I [A] in [C, T] with [Ta] it will have disadvantages for my relationship with [Ta]
7) Reinforcement	Increasing the probability of a response by arranging a dependent relationship, or contingency, between the response and a given stimulus	Rewards (proximal/distal, valued/not valued, probable/improbable), incentives, punishment, consequences, contingencies, sanctions	Whenever I [A] in [C, T] with [Ta], I get financial reimbursement Whenever I [A] in [C, T] with [Ta], I get recognition from professionals who are important to me Whenever I [A] in [C, T] with [Ta], I feel like I am making a difference
8) Intentions	A conscious decision to perform a behaviour or a resolve to act in a certain way	Stability of intentions, stages of change model, transtheoretical model, and stages of change	For how many of the next 10 [Ta] do you intend to [A] in [C]? I will definitely [A] in [C] with [Ta] in the next [T] I intend to [A] in [C] with [Ta] in the next [T] How strong is your intention to [A] with [Ta] in [C] in the next [T]?
9) Goals	Mental representations of outcomes or end states that an individual wants to achieve	Goals (distal/proximal) goal priority, goal/target setting, goals (autonomous/controlled), action planning, implementation intention	*Action planning* I have a clear plan of how I will [A] in [C, T] with [Ta] I have a clear plan under what circumstances I will [A] in [C, T] with [Ta] I have a clear plan when I will [A] in [C, T] with [Ta] I have a clear plan how often I will [A] in [C, T] with [Ta] *Priority* Generally, in [C, T] with [Ta], how often is covering something else on your agenda a higher priority than [A] Generally, in [C, T] with [Ta], how often does covering something else on your agenda take precedence over [A] Generally, in [C, T] with [Ta], how often is covering something else on your agenda more urgent than [A] Generally, in [C, T] with [Ta], how often is covering something else on your agenda more pressing than [A]

10) Memory, attention and decision processes	The ability to retain information, focus selectively of aspects of the environment and choose between two or more alternatives	Memory, attention, attention control, decision making, cognitive overload/tiredness	*Memory* [A] in [C, T] with [Ta] is easy to remember How often do you forget [A] in [C, T] with [Ta]? - How often do you have to check the [innovation/guideline] before [A] in [C, T] with [Ta]? To what extent do you know [innovation/guideline] by heart to [A] in [C, T] with [Ta]? *Attention* When I need to concentrate to [A] in [C, T] with [Ta], I have no trouble focusing my attention When I am working hard on [A] in [C, T] with [Ta], I still get distracted by events around me When trying to focus my attention on [A] in [C, T] with [Ta], I have difficulty blocking out distracting thoughts When concentrating on [A] in [C, T] with [Ta], I can focus my attention so that I become unaware of what's going on around me
11) Environmental context and resources	Any circumstance of a person's situation or environment that discourages or encourages the development of skills and abilities, independence, social competence, and adaptive behaviour	Environmental stressors, resources/material resources, organisational culture/climate, salient events/critical incidents, person x environment interaction, barriers and facilitators	[Innovation/guideline] has a good fit with routine practice [Innovation/guideline] provides the possibility to adapt it to the [Ta]'s needs (e.g., culture) . In the organization I work [A] in [C, T] with [Ta] is routine In the organization I work there is enough time to [A] in [C, T] with [Ta] Within the socio-political context there is sufficient financial support (e.g., from local authorities, insurance companies, the government) for [innovation/guideline] Within the socio-political context there are good networks between parties involved in [innovation/guideline] Prior to delivery of [innovation/guideline] professionals are provided with a training to [A] in [C, T] with [Ta] During the delivery of [innovation/guideline] professionals are provided with sufficient financial reimbursement to [A] in [C, T] with [Ta]
12) Social influences	Those interpersonal processes that can cause individuals to change their thoughts feelings, or behaviours	Social pressure, social norms, group conformity, social comparisons, group norms, social support, power, intergroup conflict, alienation, group identity, modelling	*Social support* I can rely on the team of professionals with whom I deliver [innovation] when things get tough on [A] in [C, T] with [Ta] My colleagues are willing to listen to my problems related to [A] in [C, T] with [Ta] The team of professionals with whom I deliver [innovation] is helpful in getting [A] in [C, T] with [Ta] done I can rely on my colleagues when things get tough on [A] in [C, T] with [Ta] *Subjective norm* Most people who are important to me think that I should [A] in [C, T] with [Ta] Most people whose opinion I value would approve me of [A] in [C, T] with [Ta] *Descriptive norm* The team of professionals with whom I deliver [innovation/guideline] [A] in [C, T] with [Ta].

13) Emotion	A complex reaction pattern, involving experiential, behavioural, and physiological elements, by which the individual attempts to deal with a personally significant matter or event	Fear, anxiety, affect, stress, depression, positive/negative affect, burn-out	*Affect* Thinking about yourself and how you normally feel as a professional that delivers [innovation/guideline], to what extent do you generally feel inspired with regard to [A] in [C, T] with [Ta] Thinking about yourself and how you normally feel as a professional that delivers [innovation/guideline], to what extent do you generally feel nervous with regard to [A] in [C, T] with [Ta] *Stress* Have you recently, during the past two weeks been able to enjoy your normal day-to-day activities? Have you recently, during the past two weeks been feeling unhappy and depressed?
14) Behavioural regulation	Anything aimed at managing or changing objectively observed or measured actions	Self-monitoring, breaking habit, action planning	*Automaticity* [A] in [C, T] with [Ta] is something I do automatically [A] in [C, T] with [Ta] is something I do without thinking *Self-monitoring* I keep track of my overall progress towards [A] in [C, T] with [Ta] I tend to notice my successes while working towards [A] in [C, T] with [Ta] I am aware of my day-to-day behavior as I work towards [A] in [C, T] with [Ta] I check regularly whether I am getting closer to attaining [A] in [C, T] with [Ta] *Action planning* I have a clear plan of how I will [A] in [C, T] with [Ta] I have a clear plan under what circumstances I will [A] in [C, T] with [Ta] I have a clear plan when I will [A] in [C, T] with [Ta] I have a clear plan how often I will [A] in [C, T] with [Ta]

Appendix F - CFIR Data Analysis Plan

Thesis Title: "Implementation of a First Responder Operational Stress Injury Clinic Using TDF-II and CFIR Frameworks: A paramedic perspective"
MSc Student: Valerie Testa

1.0: Purpose

The implementation science framework detailed in this data analysis plan is the *Consolidated Framework for Implementation Research (CFIR)*. This document aims to provide an outline of the phases in conducting the CFIR component of this thesis' qualitative analysis.

2.0: Analysis Overview

The data set (i.e., interview transcripts) will be analyzed deductively, using the CFIR to develop a framework for a thematic analysis (i.e., theory-driven). Coders (VT – all interviews; SH – pilot interview only) will code the transcripts into the 5 domains and 39 constructs of the CFIR.

The analysis will be conducted using the a priori codes of the CFIR framework. The primary purpose of the analysis is to clarify critical barriers and facilitators of the long-term implementation and sustainability of a First Responder Operational Stress Injury (FROSI) Clinic from the perspectives of mid and senior management paramedics and the union. Barriers and facilitators will be assessed by employing the CFIR as an determinant framework (Nilsen, 2015; Warner et al., 2018). An important component of this analysis includes assessing whether the CFIR's domains and constructs accurately classify the themes emerging from the interviews. If new emergent, data-driven themes are consistently generated beyond those included in the CFIR, they will be added to the analysis (Namey et al., 2008).

3.0: Research Questions to be Investigated

The analysis will inform two of this thesis' research questions:

1) What factors impact the feasibility of implementing a FROSI Clinic?
2) What factors impact the long-term sustainability of a FROSI Clinic?

The CFIR framework is used to establish a set of factors to enable the successful implementation of an intervention (Damschroder et al., 2009; Kirk et al., 2016; Warner et al., 2018). This thesis includes the prospective application of the CFIR to clarify factors that may impact the feasibility of implementing and long-term sustainability of the FROSI Clinic. The CFIR analysis will inform the abovementioned research questions by examining the five domains of the framework:

1) *Intervention characteristics* include the key and adaptable elements and components related to the FROSI Clinic (i.e., the intervention), the Ottawa Paramedic Service, and union (i.e., the population in which the intervention is being implemented). The evidence, strength, and quality; relative advantage; adaptability; design quality and packaging; and cost of the intervention facilitate the assessment of the intervention characteristics.
2) The *outer setting* includes the economic, political, and social ecosystem in which the Ottawa Paramedic Service and union are part of. The patient needs and resources, peer pressure, and external policy and incentives are important factors for assessing the outer setting.

3) The *inner setting* includes the structural and cultural conditions that dictate how the intervention's implementation process will occur. The structural characteristics, culture, implementation culture, and readiness for implementation are integral for assessing the inner setting.
4) The *characteristics of the individuals* include the involvement of individuals from the Ottawa Paramedic Service and the union in the intervention's implementation process. The knowledge and beliefs of these individuals about the intervention are vital for assessing the attitudes of individuals involved in the implementation and the value that they place on the importance of the intervention.
5) The *process* of engaging in active change to deliver the intervention at both the individual and organizational levels. In order to accomplish this, the engagement of key individuals in the implementation of the intervention in dissemination activities, including opinion leaders, key stakeholders, and intervention participants, are important elements to assess to inform the implementation process so that it is feasible and sustainable over the long-term.

4.0: Data Included in the Analysis

Study data included in the analysis include the transcripts of six semi-structured qualitative interviews, field notes, and demographic statistics. Participants include five Advanced Care Paramedics in mid and senior-level command positions at the Ottawa Paramedic Service and one union representative. The interviews are, on average, two hours in length.

Integration of different data collection methods:

The present thesis does not include other data collection methods outside of the semi-structured qualitative interviews to augment the analysis. The sole quantitative data includes participant demographic statistics.

5.0: Individuals Involved in the Analysis and Their Roles

This document applies to Valerie Testa (VT - for the analysis of all six interviews) and Dr. Simon Hatcher (SH - for the analysis of the pilot interview only) who are completing the coding, in full or in part, of the paramedic interviews. Jennifer Smith (JS) will participate as the third-party member if a disagreement requires the consultation of an arbitrator.

6.0: Coding

Rules for applying the codes to the data:

The coding of the data will follow the inclusion and exclusion criteria for each of the CFIR's domains and constructs outlined in the CFIR Codebook. If new codes and themes emerge during the analysis, beyond those included in the CFIR, this process should be conducted following the steps outlined in Phases 2 and 3. If and when a new code is identified, a rule for inclusion should be developed, in addition, to sample data (Saldana, 2009) and included in the CFIR Codebook document.

What gets coded (i.e., amounts of data to code):

The amount of data that is coded (i.e., every detail versus only the most salient portions) is dependent on, as described by Saldana (2009), not just focusing on sufficient qualitative but rather sufficient quality of the data with which to work. Saldana (2009) recommends that "knowing and

feeling what is important in the data record and what is not" is most important in order to "code what rises to the surface – 'relevant text.'"

Content of what gets coded:
Coded content includes activities and perceptions identified by study participants, and interviewer observer comments in field notes (Saldana, 2009).

Reconciling discrepancies:
Reconciliation of discrepancies of the pilot coding is detailed below in Phase 3.

Data reduction techniques:
Due to the sample size of the CFIR paramedic participants, data reduction techniques are not being applied within this thesis.

7.0: Credibility of the data
Credibility will be assessed through data triangulation, which includes the examination of data from different perspectives collected through the same method (i.e., semi-structured qualitative interviews). Data triangulation includes examining the data for a pattern or contradictions beyond the experience of the individual participant. This process includes: 1) identifying and deciding on the stakeholder groups (subgroups included in the study); 2) completing interviews with participants within stakeholder groups; and 3) completing between-group comparisons (Auerbach & Silverstein, 2003). Member checking will not be used to establish credibility.

Between-group comparisons:
The thematic analysis will allow for a comparison of utterances and beliefs elicited between sub-groups (i.e., mid-level command, senior command, and union), in addition to clarifying critical barriers and facilitators of the implementation and sustainability of the FROSI Clinic. Guion (2002) advises approaching triangulation by assessing the data for outcomes where there is consensus from all sub-groups. This approach suggests that if "the weight of the evidence suggests that if every stakeholder, who is looking at the issues from different points of view, sees an outcome then it is more than likely to be a true outcome" (Guion, 2002).

8.0: Phases of Analysis
The phases of analysis follow the steps for conducting a deductive thematic analysis outlined by researchers Braun and Clarke (Braun et al., 2019; Braun & Clarke, 2006, 2013) in addition to the inclusion of pilot coding.

Identification of a Thematic Framework
The first component includes the identification of a thematic framework. This was selected a priori and is the Consolidated Framework for Implementation Research (CFIR). Refer to the CFIR Interview Guide Breakdown by Domains and Constructs.

Phase 1: Familiarization with the Data
- The first phase includes researchers involved in the analysis (VT – all interviews, and SH – pilot interview) immersing themselves with the data to familiarize themselves with the complexity and scope of the interviews. Familiarization with the data is essential regardless of

which members of the research team completed the data collection (Braun & Clarke, 2006, 2012, 2013; Nowell et al., 2017b).

- To immerse oneself in the data (audio recordings, transcripts, and field notes), Braun and Clark (2006, 2012, 2013) recommend the repeated reading of the interview data from an active perspective that includes searching for meanings and patterns. The authors recommend that those involved in the analysis (VT – all interviews, and SH – pilot interview) read through the transcripts in their entirety once, at minimum, prior to beginning coding. The rationale for this approach is that it allows the researcher(s) to become familiar with all aspects of the interview data which may facilitate the generation of ideas and identification of potential patterns (Braun & Clarke, 2006, 2012, 2013).
- Lincoln & Guba (1985) and Sandelowski (1995) recommend during the familiarization process that the researcher(s) document their theoretical and reflective thoughts. This includes documenting values, interests, and emerging/developing insights about the topic (Lincoln & Guba, 1985; Sandelowski, 1995). Lincoln & Guba (1985) also recommend that the researcher(s) make notes regarding ideas about coding that can be referenced in subsequent phases of the analysis.
- During this phase, the researcher(s) should identify initial emerging themes that are reflexive and interactive (Warner et al., 2018).

Organization of the data:

- The organization and data management of large data sets is vital to the success of any project (White et al., 2012), therefore, all procedures are consistent with the data privacy and security requirements as approved by the Ottawa Health Science Network Research Ethics Board (OHSN-REB protocol ID#: 20180903-01H) and the Health Sciences and Science Research Ethics Board at the University of Ottawa (ethics file #: H-07-19-4802).
    - All files (i.e., raw data) are to be saved in the Ottawa Hospital Research Institute's "FRMHNC" (First Responder Mental Health Network Collaboration) in the Microsoft 365 SharePoint study folder.
    - File names for raw participant files and analyzed interviews in QSR NVivo 12 Pro are to represent the project name (i.e., First Responder Phase 1), followed by the participant ID number (i.e., - 001) and the initials of the researcher who completed the analysis, example: *First Responder Phase 1 – 001.VT.*

Phase 2: Generation of Initial Codes

- The second phase is to be completed by both VT and SH after having familiarized themselves with (VT – all interviews, and SH – pilot interview) an initial participant interview of their choosing to complete the pilot coding (further defined in Phase 3).
- Prior to completing the pilot coding, VT and SH will identify additional initial codes using the CFIR Codebook that are reflexive and interactive after having familiarized themselves with the data (Nowell et al., 2017b).
- Although the CFIR was identified as the a priori framework, additional codes may emerge during the familiarization process (Phase 1). If additional codes are identified (i.e. generating codes that are not included in the CFIR), they will facilitate in the development of a thematic framework (Warner et al., 2018).
- The CFIR Codebook will be updated iteratively during the analysis as additional codes emerge.

Phase 3: Pilot Coding

- Step 1:
  - VT and SH will complete pilot coding independently of one pre-agreed transcribed interview. Pilot coding will include indexing sections of the transcript to codes which reflect relevant CFIR constructs across the five domains (Warner et al., 2018) and any additional codes identified in Phase 2.
  - All analysis will be completed using QSR NVivo 12 Pro qualitative research software. NVivo will be used to assist with the compilation, organization, and coding of the interview data.
  - After finishing coding, both reviewers will complete the CFIR Memo document to help inform the discussion in Step 2.
- Step 2:
  - Comparison and review of coding between VT and SH to resolve discrepancies in the pilot coding. VT and SH will meet in Step 2 to review and discuss:
    - *1) Inter-rater reliability*
      - Which will be assessed by running a coding comparison query. The coding comparison query is used to compare the coding completed by two reviewers (VT and SH) to measure inter-rater reliability or degree of agreement (i.e., initial level of consensus) for coding between reviewers.
      - This includes assessing the Kappa coefficient. Please note that while NVivo provides the percentage agreement, this thesis will use the Kappa coefficient.
      - Level of agreement needed between VT and SH will be a minimum Kappa value of 0.40 (i.e., *fair to good agreement*):

Kappa Value	Interpretation
Below 0.40	Poor agreement
0.40 – 0.75	***Fair to good agreement***
Over 0.75	Excellent agreement

Note: A kappa score of 0.40-0.75 was used in the Theoretical Domains Framework (TDF) data analysis for this thesis. This was supported by Atkins et al's (2017) research which stated that a kappa score greater than 0.6 across each TDF domain is considered to be an acceptable level of reliability.

    - *2) Codes, Emergent Themes, and Codebook Revision*
      - During this phase, VT and SH will discuss the codes, emergent themes which emerged during the pilot coding. VT and SH will also engage in the process of codebook revision and recoding in order to reach consensus regarding the meaning of the themes (Campbell et al., 2013; Kurasaki, 2000).
      - To facilitate consensus, VT and SH should each clearly explain their understanding of the coded text (i.e., the key meaning) and rationale for selecting the domain(s). VT and SH should also discuss why the text should not be coded in an alternate domain.
  - An audit trail in Excel will be used to document the decision-making process during step 2 ("Disagreement Log and Summary Tables – CFIR Audit Trail" document). This

will also include documenting which text is attributed to which domains and will resolve disagreements. Steps to formally resolve disagreements at each step include:

- Documentation of the disagreement and resolution in the "Disagreement Log and Summary Tables – CFIR Audit Trail" document.
- When discrepancies arise, VT and SH should attempt to reach consensus and provide justification for either assigning or not assigning the given text to a domain.
- If a disagreement cannot be resolved, JS, the third party/arbitrator, will provide a critique of the analysis.
- If agreement on assigning text to an individual domain cannot be reached, consensus can be attained by assigning the text to all the domains identified by both VT and SH for the pilot coding.
- Common discrepancies:
  - Coding the same text to different CFIR domains.
  - Quotes may fit into multiple CFIR domains. In these cases, if VT and SH do not reach consensus on assigning the text to a single CFIR domain, as noted above, it is advised to code the text into all relevant CFIR domains.

- Additional codes that emerged during step 2 are to be added to the CFIR Codebook.
- Excel "Disagreement Log and Summary Table – CFIR Audit Trail" document set up:

Participant ID	Interview Type	Domains	Constructs	Sub-Constructs	Quote	Coder	Agreement & Discussion	Recode In	Coding Questions	Cohen's Kappa	Critique by 3rd Party Reviewer (Y/N)	3rd Party Agreement
P001	CFIR	Intervention Characteristics			"X…Y"							
		Outer Setting			"X…Y"							
		Inner Setting			"X…Y"							
		Characteristics of Individuals			"X…Y"							
		Process			"X…Y"							

- Step 3:
  - After the pilot coding session, one coder (VT) will generate a summary table of the transcript using the template below which describes the pre-specified domains and key quotes (see Table 1) to illustrate the domains and constructs. The summary tables for each CFIR participant are included in the "Disagreement Log and Summary Tables – CFIR Audit Trail" Excel document.

Table 1. Example: Summary Table
(in "Disagreement Log and Summary Tables – CFIR Audit Trail" document)

Participant ID	Relevant CFIR Domains	Relevant CFIR Constructs	Code Generated	Sample Quote
P001	Intervention Characteristics	Evidence Strength and Quality	Brief summary of code (example: Importance of filling the gap of providing culturally competent resources locally and long-term implementation.)	*"X quote" (quote in italics)*
	Outer Setting	Patient Needs and Resources	Brief summary of code	*"X quote" (quote in italics)*
	Inner Setting	Implementation Climate	Brief summary of code	*"X quote" (quote in italics)*

	Characteristics of Individuals	Knowledge and Beliefs About the Intervention	Brief summary of code	*"X quote" (quote in italics)*
	Process	Opinion Leaders	Brief summary of code	*"X quote" (quote in italics)*

- Step 4:
    - VT and SH will review and discuss the summary table from the pilot coding session. If necessary, modifications to the summary table will be made based on the discussion.
- Step 5:
    - If necessary, VT and SH will repeat the pilot coding steps (VT – steps 1 to 4; SH – Steps 1, 2 and 4) with a second transcript.
    - The summary table generated for the first interview will be tested again with the second transcript.
- Step 6:
    - Once the final codebook is complete and checked for representativeness, the entire sample of interviews will be coded by one coder (VT), as per Phase 4 below.

Phase 4: Searching for Themes

- One coder (VT) will:
    - Step 1:
        - Familiarize herself with the remaining data, which includes reviewing and reading notes, interview transcripts, and field notes, in addition to determination of data saturation point.
    - Step 2:
        - Complete the analysis on the remaining interview transcripts and index the codes to the interview transcripts using QSR NVivo 12 Pro.
        - Additional codes that emerge during the familiarization and data analysis process that do not fit into the CFIR domains are to be added to the CFIR Codebook, if necessary.
            - This includes repeated ideas which are first named, then classified into coherent categories, and finally organized into themes. A repeating idea is an idea that is expressed by two or more participants (Auerbach & Silverstein, 2003). A theme is "an implicit idea or topic that a group of repeating ideas have in common" (Auerbach & Silverstein, 2003). Choose a brief quote which captures the core of the repeating idea(s) in a vivid way. Once completed, consult with the pilot coder, SH, regarding the inclusion or exclusion of the new theme(s).
            - Auerbach & Silverstein (2003) recommend that if an idea appears to be important to the understanding of the implementation and/or sustainability, it may be kept. If it does not appear to be important, it can be discarded. If unsure about whether it should or should not be included, a further discussion with SH would be required and/or set it aside temporarily and return later in the analysis.
    - Step 3:
        - Allocate quotes from the transcripts to the relevant CFIR domains and constructs.

- Step 4:
  - Generate a summary table of individual transcripts after each coded interview using the template generated and modified during the pilot coding (Phase 3).

Phase 5: Reviewing Themes

- This phase will be completed by a single coder (VT) and will include generating themes (i.e., a broader consolidation of codes into categories), and reviewing the themes to ensure that they are useful and present an accurate representation of the data (Braun & Clarke, 2006, 2013).

Phase 6: Defining, and Naming Themes

- Naming the themes includes coming up with a brief and easily understandable name for each theme. Defining the themes includes expressing exactly what was meant by each theme and determining how it helps to further understand the data (Braun & Clarke, 2006, 2013). This part of the phase includes the completion of the CFIR Analysis Themes table in the "Disagreement Log and Summary Tables – CFIR Audit Trail" Excel document, following Table 2.
- Thereafter, VT and SH will meet to discuss the generated themes and their purpose, what was unique and specific about each theme, how they are named, and their respective definitions (Braun & Clarke, 2006, 2013).

Table 2. Example: Themes – CFIR Analysis
(in "Disagreement Log and Summary Tables – CFIR Audit Trail" document)

	Themes	Codes Included	Constructs	Domains	Definitions	Quotes
1)			Patient Needs and Resources	Outer Setting		**"X quote" (P001) (quote in bold)**
			Knowledge and Beliefs About the Intervention	Characteristics of Individuals		
2)			Adaptability	Intervention Characteristics		
			Design Quality and Packaging			

Phase 7: Producing the Report

- Producing the report is the final stage of the thematic analysis and involves completing the final analysis and write up of the results (Braun & Clarke, 2006, 2012, 2013).

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Appendix G - CFIR Codebook

Domains	Constructs	Short Description	Inclusion Criteria	Exclusion Criteria
1.0: Intervention Characteristics *Key attributes of interventions influence the success of implementation*	**A) Intervention source**	Perception of key stakeholders about whether the intervention is externally or internally developed.	Include statements about the source of the innovation and the extent to which interviewees viewed the change as internal to the organization, e.g., an internally developed program, or external to the organization, e.g., a program coming from the outside. Note: May code and rate as "I" for internal or "E" for external. External Source: "Wow. Well, there's nothing like an unfunded mandate you know to get … their blood boiling around here where workloads are so high." Internal Source: "We all got together and decided to create a new process to fix the problem."	Exclude or double code statements related to who participated in the decision process to implement the innovation to Engaging, as an indication of early (or late) engagement. Participation in decision-making is an effective engagement strategy to help people feel ownership of the innovation.
	B) Evidence strength and quality	Stakeholders' perceptions of the quality and validity of evidence supporting the belief that the intervention will have desired outcomes.	Include statements regarding awareness of evidence and the strength and quality of evidence as well as the absence of evidence or a desire for different types of evidence, such as pilot results instead of evidence from the literature. "We reviewed the literature and decided that things were kind of ambiguous." "The CDC guidelines gave this an A1 recommendation." "Patients lost a lot of weight when we did this." "Our IV nurse went to a conference and heard Dr. X present and she came back all fired up."	Exclude or double code statements regarding the receipt of evidence as an engagement strategy to Engaging: Key Stakeholders. Exclude or double code descriptions of use of results from local or regional pilots to Trialability.
	C) Relative advantage	Stakeholders' perception of the advantage of implementing the intervention versus an alternative solution.	Include statements that demonstrate the innovation is better (or worse) than existing programs. "We evaluated a lot of systems and this one is clearly better for our clinic."	Exclude statements that do or do not demonstrate a strong need for the innovation and/or that the current situation is untenable, e.g., statements that the innovation is absolutely necessary or that the innovation is redundant with other programs, and code to Tension for Change. Exclude statements regarding specific needs of individuals that demonstrate a need for the innovation and code to Patient Needs & Resources.
	D) Adaptability	The degree to which an intervention can be adapted, tailored, refined, or reinvented to meet local needs.	Include statements regarding the (in)ability to adapt the innovation to their context, e.g., complaints about the rigidity of the protocol. Suggestions for improvement can be captured in this code but should not be included in the rating process, unless it is clear that the participant feels the change is needed but that the program cannot be adapted.	Exclude or double code statements that the innovation did not need to be adapted to Compatibility.

Interventions have core components (essential elements) and an adaptable periphery (adaptable elements, structures and systems related to the intervention and the organization into which it is being implemented.	**E) Trialability**	The ability to test the intervention on a small scale in the organization, and to be able to reverse course (undo implementation) if warranted.	Include statements related to whether the site piloted the innovation in the past or has plans to in the future, and comments about whether they believe it is (im)possible to conduct a pilot. Include descriptions of smaller trials of the innovation before widespread implementation or use of information from local or regional pilots. "There is no way we can pilot something like that." "I think it would take me a while to get there, but knowing we are able to try it, I think I would certainly be willing to try with some help, trying a few patients on it as long as I know they've got follow-up care."	Exclude or double code descriptions of use of results from local or regional pilots to Evidence Strength & Quality.
	F) Complexity	Perceived difficulty of implementation, reflected by duration, scope, radicalness, disruptiveness, centrality, and intricacy and number of steps required to implement.	Code statements regarding the complexity of the innovation. "There were so many pieces and parts to the process, but we were able to get it going because we did it in phases." "It changed the whole way our team worked together – the workflow and roles during these surgeries is so different now."	Exclude statements regarding the complexity of implementation and code to other appropriate CFIR codes, e.g., code difficulties related to space to Available Resources and code difficulties related to engaging participants in a new program to Engaging: Innovation Participants.
	G) Design quality and packaging	Perceived excellence in how the intervention is bundled, presented, and assembled.	Include statements regarding the quality of the materials and packaging. "We got approval to use the new drapes for inserting catheters, but we have worked for over a year to actually get them bundled into the IV kits." "The data is in there, but the reporting modules don't work." "The idea was good, but our money people just went and bought the cheapest version and now we have to throw half of them away."	Exclude statements regarding the presence or absence of materials and code to Available Resources. Exclude statements regarding the receipt of materials as an engagement strategy and code to Engaging.
	H) Cost	Costs of the intervention and costs associated with implementing the intervention including investment, supply, and opportunity cost.	Include statements related to the cost of the innovation.	Exclude statements related to money, physical space, and time and code to Available Resources.
2.0: Outer Setting *The economic, political and social context within which an organization resides.*	**A) Patient needs and resources**	The extent to which patient needs, as well as barriers and facilitators to meet those needs, are accurately known and prioritized by the organization.	Include statements demonstrating (lack of) awareness of the needs and resources of those served by the organization. Analysts may be able to infer the level of awareness based on statements about:1. Perceived need for the innovation based on the needs of those served by the organization and if the innovation will meet those needs; 2. Barriers and facilitators of those served by the organization to participating in the innovation; 3. Participant feedback on the innovation, i.e., satisfaction and success in a program. In addition, include statements that capture whether or not awareness of the needs and resources of those served by the organization influenced the implementation or adaptation of the innovation.	Exclude statements that do or do not demonstrate a strong need for the innovation and/or that the current situation is untenable, e.g., statements that the innovation is absolutely necessary or that the innovation is redundant with other programs, and code to Tension for Change. Exclude statements related to engagement strategies and outcomes, e.g., how innovation participants became engaged with the innovation, and code to Engaging: Innovation Participants.

	B) Cosmopolitanism	The degree to which an organization is networked with other external organizations.	Include descriptions of outside group memberships and networking done outside the organization. "I am a member of the ADA and go to a conference about once per year." "Networking is very important to me… I get a lot of ideas." "I'm president of the local chapter." "My department pays to send each of us to a conference every year."	Exclude statements about general networking, communication, and relationships in the organization, such as descriptions of meetings, email groups, or other methods of keeping people connected and informed, and statements related to team formation, quality, and functioning and code to Networks & Communications.
	C) Peer pressure	Mimetic or competitive pressure to implement an intervention; typically, because most or other key peer or competing organizations have already implemented or are in a bid for competitive edge.	Include statements about perceived pressure or motivation from other entities or organizations in the local geographic area or system to implement the innovation. "I went to a conference and heard [a prominent physician] speak about [the innovation] so I came back and pushed to get it implemented here." This statement may be double coded with Evidence Strength & Quality "All the other clinics in our area are doing this so I want to be sure we're doing it here too." "Our facility is so far behind the other facilities in the system."	Currently no exclusionary criteria.
	D) External policy and incentives	A broad construct that includes external strategies to spread interventions, including policy and regulations (governmental or other central entity), external mandates, recommendations and guidelines, pay-for-performance, collaboratives, and public or benchmark reporting.	Include descriptions of external performance measures from the system. "My supervisor was really motivated by reports of how well we were complying with the new practice from the collaborative." "The local newspaper started reporting infection rates so leadership really started pushing to get our rates down." "It's an A1 recommendation so the Critical Care Committee said we needed to make the change." "All leaders here care about is making their performance measures and there isn't one for this program."	Currently no exclusionary criteria.
3.0: Inner Setting *The structural and cultural contexts through which the implementation process occurs.*	**A) Structural characteristics**	The social architecture, age, maturity, and size of an organization.	Currently no inclusion criteria.	Currently no exclusionary criteria.

	B) Networks and communication	The nature and quality of webs of social networks and the nature and quality of formal and informal communications within an organization.	Include statements about general networking, communication, and relationships in the organization, such as descriptions of meetings, email groups, or other methods of keeping people connected and informed, and statements related to team formation, quality, and functioning. "We worked with prosthetics and physical therapy to get this going." "The people in prosthetics wouldn't order the supplies we needed…they care more about rules than helping patients." "I have a great relationship with my boss…she supports me in getting this by asking me status and we have regular meetings." Note: May double-code this with Leadership Engagement "If I want to get something done, informal communications work the best. I just email or pick up the phone." "I wouldn't go through formal communications to get anything done, that just takes too much documentation, and nothing gets done… it's better to stay under the radar." "We hardly knew each other in the beginning but now we are a real team – we even go out to dinner sometimes."	Exclude statements related to implementation leaders' and users' access to knowledge and information regarding using the program, i.e. training on the mechanics of the program and code to Access to Knowledge & Information. Exclude statements related to engagement strategies and outcomes, e.g., how key stakeholders became engaged with the innovation and what their role is in implementation, and code to Engaging: Key Stakeholders. Exclude descriptions of outside group memberships and networking done outside the organization and code to Cosmopolitanism.
	C) Culture	Norms, values, and basic assumptions of a given organization.	Include statements related to concepts captured in the Competing Values Framework (CVF). Note: You may use this to assign an interpretive "attribute" code to the site as a whole. Due to the way interview questions are structured, culture may not be addressed directly in the study. However, you may believe the site is predominantly one of four quadrants based on an overall assessment. Please see the Competing Values Framework. "It's impossible to get anything done around here because you have to get approvals from 2-3 different committees and purchasing is so bureaucratic."	Currently no exclusionary criteria.
	D) Implementation climate	The absorptive capacity for change, shared receptivity of involved individuals to an intervention, and the extent to which use of that intervention will be rewarded, supported, and expected within their organization.	Include statements regarding the general level of receptivity to implementing the innovation.	Exclude statements regarding the general level of receptivity that are captured in the sub-codes.

The inner setting is increasingly recognized as an active interacting facet and not just as a backdrop in implementation.	**1) Tension for change** *(subconstruct of Implementation Climate)*	The degree to which stakeholders perceive the current situation as intolerable or needing change.	Include statements that (do not) demonstrate a strong need for the innovation and/or that the current situation is untenable, e.g., statements that the innovation is absolutely necessary or that the innovation is redundant with other programs. Note: If a participant states that the innovation is redundant with a preferred existing program, (double) code lack of Relative Advantage. "We had a weight management clinic before but we were not able to follow up with any patients because we didn't have the staff… and we didn't have a multi-disciplinary team." "We really need to do something to get patients to take their meds." "The current system is down all the time and I can't get what I need in time to do any good."	Exclude statements regarding specific needs of individuals that demonstrate a need for the innovation, but do not necessarily represent a strong need or an untenable status quo, and code to Patient Needs & Resources. Note: CFIR V2 will rename Patient Needs and Resources to Needs and Resources of Those Served by the Organization. Exclude statements that demonstrate the innovation is better (or worse) than existing programs and code to Relative Advantage.
	2) Compatibility *(subconstruct of Implementation Climate)*	The degree of tangible fit between meaning and values attached to the intervention by involved individuals, how those align with individuals' own norms, values, and perceived risk and needs, and how the intervention fits with existing workflows and systems.	Include statements that demonstrate the level of compatibility the innovation has with organizational values and work processes. Include statements that the innovation did not need to be adapted. "We already had a weight loss clinic so when MOVE! was mandated, we were glad to finally have a way of getting others on board." "The physicians don't like the new system because they feel like it takes away their autonomy in the way they treat patients."	Exclude or double code statements regarding the priority of the innovation based on compatibility with organizational values to Relative Priority, e.g., if an innovation is not prioritized because it is not compatible with organizational values.
	3) Relative priority *(subconstruct of Implementation Climate)*	Individuals' shared perception of the importance of the implementation within the organization.	Include statements that reflect the relative priority of the innovation e.g., statements related to change fatigue in the organization due to the implementation of many other programs. "We have so many studies going on that I feel like this just doesn't get the attention it needs. We are all too overwhelmed." "It's really important for us to get this done because it will affect our performance measures."	Exclude or double code statements regarding the priority of the innovation based on compatibility with organizational values to Compatibility, e.g., if an innovation is not prioritized because it is not compatible with organizational values.
	4) Organizational incentives & rewards *(subconstruct of Implementation Climate)*	Extrinsic incentives such as goal-sharing awards, performance reviews, promotions, and raises in salary and less tangible incentives such as increased status or respect.	Include statements related to whether incentive systems are in place to foster (or hinder) implementation, e.g., rewards or disincentives for staff engaging in the innovation. "One of the dietitians basically dropped out and I don't know what happened. Our chief didn't do anything to get her going again so the extra work fell on us." "We have a goal-sharing team doing it. They each get $500 if they succeed in making it happen." "I'm really hoping this project succeeds because this is a way to show that I'm ready to be promoted at my next evaluation."	Currently no exclusionary criteria.

	5) Goals and feedback *(subconstruct of Implementation Climate)*	The degree to which goals are clearly communicated, acted upon, and fed back to staff, and alignment of that feedback with goals.	Include statements related to the (lack of) alignment of the innovation with larger organizational goals, as well as feedback to staff regarding those goals, e.g., regular audit and feedback regarding the gap between the current organizational status and the future (goal) organizational status. Goals and Feedback is independent of the implementation process; it likely continues when implementation activities end.	Exclude statements that refer to the process used in implementation, i.e., the implementation team's (lack of) on-going review of implementation progress and code to Reflecting & Evaluating. Reflecting and Evaluating is part of the implementation process; it likely ends when implementation activities end.
	6) Learning climate *(subconstruct of Implementation Climate)*	A climate in which: a) leaders express their own fallibility and need for team members' assistance and input; b) team members feel that they are essential, valued, and knowledgeable partners in the change process; c) individuals feel psychologically safe to try new methods; and d) there is sufficient time and space for reflective thinking and evaluation.	Include statements that support (or refute) the degree to which key components of an organization exhibit a "learning climate." "Last year we had a colossal failure in trying to change our procedure to check patients in. We met about that and we are looking forward to trying something like that again because we agreed on what we think caused the failure." "I emphasize with my team that they need to bring out any and all problems."	Currently no exclusionary criteria.
	E) Readiness for implementation	Tangible and immediate indicators of organizational commitment to its decision to implement an intervention.	Include statements regarding the general level of readiness for implementation.	Exclude statements regarding the general level of readiness for implementation that are captured in the sub-codes.

	1) Leadership engagement *(subconstruct of Readiness for Implementation)*	Commitment, involvement, and accountability of leaders and managers with the implementation.	Include statements regarding the level of engagement of organizational leadership. Note: There can be confusion at times between this construct and the Process: Engaging construct; some users have asked why leaders do not appear under Engaging. A note has been entered under DISCUSSION (click on the table above) to rename this construct to Leadership Commitment or Leadership Support to help avoid confusion resulting from multiple uses of the term "Engagement" under Inner Setting and Process. Here is an explanation: Organizational leaders are an integral part of the organization; their role is not defined by the implementation project at hand. All the other roles listed under Engaging are roles that exist only because of the current change effort, e.g., Champions are not champions for everything, only for that change effort. Although some people may champion multiple change efforts, they cannot possibly champion everything; champion is not a stable organizational role. Organizational leaders delegate specific implementation efforts to other staff or teams, and then the question is, to what extent do they commit, endorse, and support their efforts? Leader apathy can hinder implementation efforts and implementation leaders need to develop strategies to engage leadership by meeting with them, discussing their concerns, fostering alignment of the implementation with organizational plans and goals, brainstorming solutions to problems early in the process to cultivate their ownership in solutions, and persuading them to visibly notify stakeholders that they support the change. These are all techniques the implementation leader or team can consider in order to gain leadership support and overcome leader apathy. "My supervisor comes to all the meetings." "My supervisor's good; she's been involved enough to show us that it's important." "The hospital director asks about it in weekly reports." "I know if anything goes wrong, I can go to the chief of staff and she'll take care of it." "It's hard to get anything done around here because half the time, the director of the unit is out of town or has some kind of conflict." "The powers that be told me not to go to those meetings anymore."	Exclude or double code statements regarding leadership engagement to Engaging: Formally Appointed Internal Implementation Leaders or Champions if an organizational leader, e.g., if a director of primary care takes the lead in implementing a new treatment guideline. Note that a key characteristic of this Implementation Leader/Champion is that s/he is also an Organizational Leader.

	2) Available resources *(subconstruct of Readiness for Implementation)*	The level of resources dedicated for implementation and on-going operations, including money, training, education, physical space, and time.	Include statements related to the presence or absence of the resources described above or resources specific to the innovation that is being implemented. "The last hospital director signed an MOU, promising a ½ FTE to be the coordinator to get this practice in but that never materialized. Even when we showed the new director the signed MOU, he didn't do anything." The latter statement would be double-coded with Leadership Engagement. "We've outgrown the space allotted for group visits and now we're trying to figure out what we can do – the room we have is way too small." "I took this position on top of all my other duties. My supervisor did not reduce my clinic allocations to do this so I just squeeze it in when I can." "I wrote a proposal for the VISN, asking for 1 FTE for each of the sites and they approved it. We're very excited."	Exclude statements related to training and code to Access to Knowledge and Information. Exclude statements related to the quality of materials and code to Design Quality & Packaging.
	3) Access to knowledge & information *(subconstruct of Readiness for Implementation)*	Ease of access to digestible information and knowledge about the intervention and how to incorporate it into work tasks.	Include statements related to implementation leaders' and users' access to knowledge and information regarding using the program, i.e., training on the mechanics of the program. "They sent us to training about 9 months before implementation so by the time things were finally ready, I forgot what to do." "She's been wonderful. Every time I have a question, I just email her, and she helps me out." "I can't get access to the reports I need to figure out which patients to target." "I plan to give little sessions about the intervention to nurses, residents, and physicians. It's important to tailor the information to each group. Otherwise, they won't buy in." "I didn't get all the information I needed. I felt so frustrated because no one around here knew anything about it, so I just gave up and started doing it the old way."	Exclude statements related to engagement strategies and outcomes, e.g., how key stakeholders became engaged with the innovation and what their role is in implementation, and code to Engaging: Key Stakeholders. Exclude statements about general networking, communication, and relationships in the organization, such as descriptions of meetings, email groups, or other methods of keeping people connected and informed, and statements related to team formation, quality, and functioning and code to Networks & Communications.
4.0: Characteristics of Individuals *The individuals involved with the intervention and/or implementation process.* *Organizations are made up of individuals. Setting and intervention constructs are rooted, ultimately,*	**A) Knowledge and beliefs about the intervention**	Individuals' attitudes toward and value placed on the intervention as well as familiarity with facts, truths, and principles related to the intervention.	Currently no inclusion criteria.	Currently no exclusionary criteria.
	B) Self-efficacy	Individual belief in their own capabilities to execute courses of action to achieve implementation goals.	Currently no inclusion criteria.	Currently no exclusionary criteria.
	C) Individual stage of change	Characterization of the phase an individual is in, as he or she progresses toward skilled, enthusiastic, and sustained use of the intervention.	Currently no inclusion criteria.	Currently no exclusionary criteria.

in the actions and behaviours of individuals. Little is known about the interplay between individuals and their ripple effects through their teams, units, networks, and organizations on implementation.	**D) Individual identification with organization**	A broad construct related to how individuals perceive the organization, and their relationship and degree of commitment with that organization.	Currently no inclusion criteria.	Currently no exclusionary criteria.
	E) Other personal attributes	A broad construct to include other personal traits such as tolerance of ambiguity, intellectual ability, motivation, values, competence, capacity, and learning style.	Include statements based on study objectives, for example, locus of control, and other concepts from health or organizational psychology found to be related to a particular implementation.	Currently no exclusionary criteria.
5.0: Process *An active change process is usually required to deliver individual and organizational use of the intervention as designed.*	**A) Planning**	The degree to which a scheme or method of behaviour and tasks for implementing an intervention are developed in advance, and the quality of those schemes or methods.	Include evidence of pre-implementation diagnostic assessments and planning as well as refinements to the plan. Note: The example below may also be interpreted as the synthesis and evaluation of evidence to determine the formality of planning and if any planning activities were done. "We held an all-day working meeting where everyone developed a process map and then we tried to figure out what the steps should be to get the new process going."	Currently no exclusionary criteria.

	B) Engaging	Attracting and involving appropriate individuals in the implementation and use of the intervention through a combined strategy of social marketing, education, role modeling, training, and other similar activities.	Engaging Include statements related to engagement strategies and outcomes, i.e., if and how staff and innovation participants became engaged with the innovation and what their role is in implementation. Note: Although both strategies and outcomes are coded here, the outcome of engagement efforts determines the rating, i.e., if there are repeated attempts to engage staff that are not successful, or if a role is vacant, the construct receives a negative rating. In addition, you may also want to code the "quality" of staff – their capabilities, motivation, and skills, i.e., how good they are at their job, and this affects the rating as well. Note: Two new sub-constructs are proposed: Engaging: Key Stakeholders (e.g., providers and staff) and Engaging: Innovation Participants (e.g., patients). These sub-constructs will be included in CFIR V2. Engaging: Key Stakeholders Include statements related to engagement strategies and outcomes, e.g., how key stakeholders became engaged with the innovation and what their role is in implementation. Note: Although both strategies and outcomes are coded here, the outcome of efforts to engage staff determines the rating, i.e., if there are repeated attempts to engage key stakeholders that are not successful, the construct receives a negative rating. Engaging: Innovation Participants Include statements related to engagement strategies and outcomes, e.g., how innovation participants became engaged with the innovation. Note: Although both strategies and outcomes are coded here, the outcome of efforts to engage participants determines the rating, i.e., if there are repeated attempts to engage participants that are not successful, the construct receives a negative rating.	Engaging Exclude statements related to specific sub constructs, e.g., Champions or Opinion Leaders. Exclude or double code statements related to who participated in the decision process to implement the innovation to Intervention Source, as an indicator of internal or external intervention source. Engaging: Key Stakeholders Exclude statements related to implementation leaders' and users' access to knowledge and information regarding using the program, i.e., training on the mechanics of the program, and code to Access to Knowledge & Information. Exclude statements about general networking, communication, and relationships in the organization, such as descriptions of meetings, email groups, or other methods of keeping people connected and informed, and statements related to team formation, quality, and functioning, and code to Networks & Communications. Engaging: Innovation Participants Exclude statements demonstrating (lack of) awareness of the needs and resources of those served by the organization and whether or not that awareness influenced the implementation or adaptation of the innovation and code to Patient Needs & Resources.
	1) Opinion leaders *(subconstruct of Engaging)*	Individuals in an organization who have formal or informal influence on the attitudes and beliefs of their colleagues with respect to implementing the intervention.	Include statements related to engagement strategies and outcomes, e.g., how the opinion leader became engaged with the innovation and what their role is in implementation. Note: Although both strategies and outcomes are coded here, the outcome of efforts to engage staff determines the rating, i.e., if there are repeated attempts to engage an opinion leader that are not successful, or if the opinion leader leaves the organization and this role is vacant, the construct receives a negative rating. In addition, you may also want to code the "quality" of the opinion leader here – their capabilities, motivation, and skills, i.e., how good they are at their job, and this affects the rating as well.	Currently no exclusionary criteria.

	2) Formally appointed internal implementation leaders *(subconstruct of Engaging)*	Individuals from within the organization who have been formally appointed with responsibility for implementing an intervention as coordinator, project manager, team leader, or other similar role.	Include statements related to engagement strategies and outcomes, e.g., how the formally appointed internal implementation leader became engaged with the innovation and what their role is in implementation. Note: Although both strategies and outcomes are coded here, the outcome of efforts to engage staff determines the rating, i.e., if there are repeated attempts to engage an implementation leader that are not successful, or if the implementation leader leaves the organization and this role is vacant, the construct receives a negative rating. In addition, you may also want to code the "quality" of the implementation leader here – their capabilities, motivation, and skills, i.e., how good they are at their job, and this affects the rating as well.	Exclude or double code statements regarding leadership engagement to Leadership Engagement if an implementation leader is also an organizational leader, e.g., if a director of primary care takes the lead in implementing a new treatment guideline.
	3) Champions *(subconstruct of Engaging)*	Individuals who dedicate themselves to supporting, marketing, and driving through an [implementation], overcoming indifference or resistance that the intervention may provoke in an organization.	Include statements related to engagement strategies and outcomes, e.g., how the champion became engaged with the innovation and what their role is in implementation. Note: Although both strategies and outcomes are coded here, the outcome of efforts to engage staff determines the rating, i.e., if there are repeated attempts to engage a champion that are not successful, or if the champion leaves the organization and this role is vacant, the construct receives a negative rating. In addition, you may also want to code the "quality" of the champion here – their capabilities, motivation, and skills, i.e., how good they are at their job, and this affects the rating as well.	Exclude or double code statements regarding leadership engagement to Leadership Engagement if a champion is also an organizational leader, e.g., if a director of primary care takes the lead in implementing a new treatment guideline.
	4) External change agents *(subconstruct of Engaging)*	Individuals who are affiliated with an outside entity who formally influence or facilitate intervention decisions in a desirable direction.	Include statements related to engagement strategies and outcomes, e.g., how the external change agent (entities outside the organization that facilitate change) became engaged with the innovation and what their role is in implementation, e.g., how they supported implementation efforts. Note: Although both strategies and outcomes are coded here, the outcome of efforts to engage staff determines the rating, i.e., if there are repeated attempts to engage an external change agent that are not successful, or if the external change agent leaves their organization and this role is vacant, the construct receives a negative rating. In addition, you may also want to code the "quality" of the external change agent here – their capabilities, motivation, and skills, i.e., how good they are at their job, and this affects the rating as well. "The project manager for the research study was always available and helpful to us." "Someone from the collaborative that we participated in checked in with us regularly."	Note: It is important to clearly define what roles are external and internal to the organization. Exclude statements regarding facilitating activities, such as training in the mechanics of the program, and code to Access to Knowledge & Information if the change agent is considered internal to the study, e.g., a staff member at the national office. If the study considers this staff member internal to the organization, it should not be coded to Access to Knowledge & Information, even though their support may overlap with what would be expected from an External Change Agent.
	5) Key Stakeholders (subconstruct of Engaging) *****Additional construct that have been useful in past projects (also included in CFIR Interview Guide Tool: https://cfirguide.org/guide/app/#/***	How key stakeholders became engaged with the innovation and what their role is in implementation. If there are repeated attempts to engage key stakeholders that are not successful, the construct receives a negative rating.		

	6) Intervention Participants *(subconstruct of Engaging) **Additional construct that have been useful in past projects (also included in CFIR Interview Guide Tool: https://cfirguide.org/guide/app/#/*	Engagement strategies and outcomes, e.g., how innovation participants became engaged with the innovation. If there are repeated attempts to engage participants that are not successful, the construct receives a negative rating.		
	C) Executing	Carrying out or accomplishing the implementation according to plan.	Include statements that demonstrate how implementation occurred with respect to the implementation plan. Note: Executing is coded very infrequently due to a lack of planning. However, some studies have used fidelity measures to assess executing, as an indication of the degree to which implementation was accomplished according to plan.	Currently no exclusionary criteria.
	D) Reflecting and evaluating	Quantitative and qualitative feedback about the progress and quality of implementation accompanied with regular personal and team debriefing about progress and experience.	Include statements that refer to the process used in implementation, i.e., the implementation team's (lack of) on-going review of implementation progress. Reflecting and Evaluating is part of the implementation process; it likely ends when implementation activities end. It does not require goals be explicitly articulated; it can focus on the current state, though there may be an implied goal (e.g., we need to implement the innovation) when the implementation team discusses feedback in terms of adjustments needed to complete implementation.	Exclude statements related to the (lack of) alignment of the innovation with larger organizational goals, as well as feedback to staff regarding those goals, e.g., regular audit and feedback regarding the gap between the current organizational status and the future (goal) organizational status and code to Goals & Feedback. Goals and Feedback is independent of the implementation process; it likely continues when implementation activities end. Exclude statements that capture the reflecting and evaluating that participants may do during the interview, for example, related to the success of the implementation and code to Knowledge & Beliefs about the Intervention.

Definitions and Inclusion/Exclusion Criteria from:
CFIR Research Team-Center for Clinical Management Research. (2014, October). *Constructs*. Consolidated Framework for Implementation Research. https://cfirguide.org/constructs/.

Université d'Ottawa
Bureau d'éthique et d'intégrité de la recherche

University of Ottawa
Office of Research Ethics and Integrity

Appendix H - University of Ottawa Office of Research Ethics and Integrity Letter of Administrative Approval (Annual Renewal)

Lettre d'approbation administrative | Letter of administrative approval

Numéro de dossier / Ethics File Number	H-07-19-4802
Titre du projet / Project Title	Implementation of a First Responder Operational Stress Injury Clinic Using TDF-II and CFIR Frameworks: A paramedic perspective
Type de projet / Project Type	Thèse de maîtrise / Master's thesis
CÉR primaire / Primary REB	Réseau de science de la santé d'Ottawa (RSSO) / Ottawa Health Science Network (OHSN)
Statut du projet / Project Status	Renouvelé / Renewed
Date d'approbation (jj/mm/aaaa) / Approval Date (dd/mm/yyyy)	28/02/2020
Date d'expiration (jj/mm/aaaa) / Expiry Date (dd/mm/yyyy)	19/02/2021

Équipe de recherche / Research Team

Chercheur / Researcher	Affiliation	Role
Valerie TESTA	École interdisciplinaire des sciences de la santé / Interdisciplinary School of Health Sciences	Chercheur Principal / Principal Investigator
Jeffrey JUTAI	École interdisciplinaire des sciences de la santé / Interdisciplinary School of Health Sciences	Superviseur / Supervisor
Simon HATCHER		Co-superviseur / Co-supervisor

Conditions spéciales ou commentaires / Special conditions or comments:

OHSN REB Protocol ID # 20180903-01H

Université d'Ottawa
Bureau d'éthique et d'intégrité de la recherche

University of Ottawa
Office of Research Ethics and Integrity

L'Université d'Ottawa a signé une Entente, conforme aux exigences de la plus récente version de l'EPTC et tout autre règlement ou législation applicable, permettant au CÉR ci-haut nommé d'être désigné comme CÉR primaire pour les projets de recherche où

1) les activités principales de recherche sont menées sous l'autorité ou sous les auspices de l'établissement lié au CÉR primaire et

2) Une partie du projet est également réalisé sous l'autorité ou sous les auspices de l'Université d'Ottawa.

Cette lettre confirme que l'Université d'Ottawa a autorisé que le CÉR primaire soit le CÉR officiel pour l'évaluation et la supervision de ce projet de recherche. Ceci n'est pas une approbation éthique.

Afin de nous aider à garder votre dossier à jour, veuillez soumettre une copie de toutes demandes de modification, renouvellement d'approbation éthique etc. soumis à et approuvé par le CÉR primaire dès qu'elles sont disponibles.

Cette approbation administrative est valide pour la durée indiquée ci-haut et est sujette aux conditions énumérées dans la section intitulée « Conditions spéciales ou commentaires ».

The University of Ottawa has signed an Agreement, compliant with current TCPS guidelines and any other applicable guidelines or legislation regarding multisite review, allowing the REB named above to serve as Board of Record (BoR) for research projects where

1) the main research activities are conducted within the auspices or jurisdiction of the BoR's institution and

2) parts of the project are also conducted under the jurisdiction or auspices of the University of Ottawa.

This letter confirms that the University of Ottawa has authorized the REB named above to serve as Board of Record for the review and oversight of this research project. This is not an REB approval.

In order to help us keep your file up to date, please submit a copy of all amendment requests, project renewals or any other changes submitted to and approved by the BoR, as they become available.

Administrative approval is valid for the period indicated above and is subject to the conditions listed in the section entitled «Special conditions or comments».

Marc Alain BONENFANT
Coordonnateur de l'éthique / Ethics Coordinator
Pour/For **Daniel LAGAREC** Président(e) du/ Chair of the **Comité d'éthique de la recherche en sciences de la santé et sciences / Health Sciences and Sciences Research Ethics Board**

Université d'Ottawa
Bureau d'éthique et d'intégrité de la recherche

University of Ottawa
Office of Research Ethics and Integrity

Appendix I - University of Ottawa Office of Research Ethics and Integrity
Letter of Administrative Approval

Lettre d'approbation administrative | Letter of administrative approval

Numéro de dossier / Ethics File Number	H-07-19-4802
Titre du projet / Project Title	Implementation of a First Responder Operational Stress Injury Clinic Using TDF-II and CFIR Frameworks
Type de projet / Project Type	Thèse de maîtrise / Master's thesis
CÉR primaire / Primary REB	Réseau de science de la santé d'Ottawa (RSSO) / Ottawa Health Science Network (OHSN)
Statut du projet / Project Status	Approuvé / Approved
Date d'approbation (jj/mm/aaaa) / Approval Date (dd/mm/yyyy)	31/07/2019
Date d'expiration (jj/mm/aaaa) / Expiry Date (dd/mm/yyyy)	28/02/2020

Équipe de recherche / Research Team

Chercheur / Researcher	Affiliation	Role
Valerie TESTA	École interdisciplinaire des sciences de la santé / Interdisciplinary School of Health Sciences	Chercheur Principal / Principal Investigator
Jeffrey JUTAI	École interdisciplinaire des sciences de la santé / Interdisciplinary School of Health Sciences	Superviseur / Supervisor
Simon HATCHER		Co-superviseur / Co-supervisor

Conditions spéciales ou commentaires / Special conditions or comments:

OHSN REB Protocol ID # 20180903-01H

Université d'Ottawa
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L'Université d'Ottawa a signé une Entente, conforme aux exigences de la plus récente version de l'EPTC et tout autre règlement ou législation applicable, permettant au CÉR ci-haut nommé d'être désigné comme CÉR primaire pour les projets de recherche où

1) les activités principales de recherche sont menées sous l'autorité ou sous les auspices de l'établissement lié au CÉR primaire et

2) Une partie du projet est également réalisé sous l'autorité ou sous les auspices de l'Université d'Ottawa.

Cette lettre confirme que l'Université d'Ottawa a autorisé que le CÉR primaire soit le CÉR officiel pour l'évaluation et la supervision de ce projet de recherche. Ceci n'est pas une approbation éthique.

Afin de nous aider à garder votre dossier à jour, veuillez soumettre une copie de toutes demandes de modification, renouvellement d'approbation éthique etc. soumis à et approuvé par le CÉR primaire dès qu'elles sont disponibles.

Cette approbation administrative est valide pour la durée indiquée ci-haut et est sujette aux conditions énumérées dans la section intitulée « Conditions spéciales ou commentaires ».

The University of Ottawa has signed an Agreement, compliant with current TCPS guidelines and any other applicable guidelines or legislation regarding multisite review, allowing the REB named above to serve as Board of Record (BoR) for research projects where

1) the main research activities are conducted within the auspices or jurisdiction of the BoR's institution and

2) parts of the project are also conducted under the jurisdiction or auspices of the University of Ottawa.

This letter confirms that the University of Ottawa has authorized the REB named above to serve as Board of Record for the review and oversight of this research project. This is not an REB approval.

In order to help us keep your file up to date, please submit a copy of all amendment requests, project renewals or any other changes submitted to and approved by the BoR, as they become available.

Administrative approval is valid for the period indicated above and is subject to the conditions listed in the section entitled «Special conditions or comments».

Catherine PAQUET
Directeur / Director
Pour/For **Daniel LAGAREC** Président(e) du/ Chair of the **Comité d'éthique de la recherche en sciences sociales et humanités / Social Sciences and Humanities Research Ethics Board**

Appendix J - CFIR Figures and Tables

Overview of the CFIR Findings

The analyzed data from the six interviews were coded into 27 constructs (blue boxes) for assessment of the feasibility of implementing the clinic and the long-term sustainability of the intervention. The data for the remaining constructs (white boxes) were not obtained. Yellow boxes include four constructs that were coded but not included in the 11 themes.

Consolidated Framework for Implementation Research				
Intervention Characteristics	**Outer Setting**	**Inner Setting**	**Characteristics of Individuals**	**Process**
Intervention Source	**Patient Needs & Resources**	**Structural Characteristics**	**Knowledge & Beliefs About the Intervention**	**Planning**
Evidence Strength & Quality	Cosmopolitanism	**Networks & Communication**	Self-Efficacy	**Engaging**
Relative Advantage	**Peer Pressure**	**Culture**	**Individual Stage of Change**	**Opinion Leaders**
Adaptability	**External Policy & Incentives**	**Implementation Climate**	Individual Identification with Organization	Formally Appointed Internal Implementation Leaders
Trialability		**Tension for Change**	Other Personal Attributes	**Champions**
Complexity		**Compatibility**		External Change Agents
Design Quality & Packaging		**Relative Priority**		**Key Stakeholders**
Cost		Organizational Incentives & Rewards		Intervention Participants
		Goals & Feedback		Executing
		Learning Climate		Reflecting & Evaluating
		Readiness for Implementation		
		Leadership Engagement		
		Available Resources		
		Access to Knowledge & Information		

CFIR Domains and Constructs Associated with Qualitative Themes

Themes	CFIR Domains	CFIR Constructs	Quotes
1) The clinic fills a gap to meet paramedic mental health needs	Intervention Characteristics	Relative Advantage	*"Peer support is strictly…an initial touch point…much more around education, promoting wellness at the workplace…It's not trying to be long-term therapy. It's just trying to give people that initial support and a hearing if they want to talk about stuff. Usually, kind of when issues are coming up or…as soon as possible after the point of exposure as opposed to the longer term…some of them [peer supporters] do follow people longer term to give them support. The EAP really is – gets you one or two visits, and it's really to tide you over until you can get longer-term support. The clinic I see as more definitive care. It's getting you in…" (P017)*
	Outer Setting	Patient Needs and Resources	*"It's good that it's going to be specific for these people. Well, our hope is that it will be timelier than our EAP or private care. So, if those are true then those are advantages...The more resources we make available, this is not the only thing that's going to be available to staff so look at it as another resource that will be dependent, I guess, on the individual and case by case, whether it's going to be something that they should participate in or are they going to go down a different path..." (P016)* *"Utmost importance. I started in the '80s and I could name for you guys 20, 30 names of co-workers that didn't make it. None of them took their lives but some came close, and it's very important because back then, we just didn't talk about it. We buried it...4 per cent of us make it to retirement…along the way we've lost our members due to physical injuries, burnout, well we called it burnout then. You just went undiagnosed…back then—this is before the City of Ottawa—I'm going back to the Ambulance Service before the City took over and then the City took over 18 years ago. Even then, things stayed status quo in terms of psychological support, recognition of psychological injury…this was needed 25 years ago because there's some real people that got really damaged, which is sad, right?...you kind of felt helpless to help them because we never had any training in this stuff. And when they couldn't handle the job anymore, so they would just go off and then you lost a partner, but you also lost a friend…That's not right. We can do a lot better. And it's very complicated. Where to start? And we don't want to screw it up, right? And families, too. Their families are destroyed, some cases over this...whether a divorce was coming or not by the job, or the fact they didn't have a relationship with their children...this type of work can numb a person. That's why we need to be more aware of prevention, signs and symptoms and stuff, and for the clinic to be there as well." (P019)*
	Inner Setting	Tension for Change Implementation Climate	*"Oh yeah. The Peer Support people and the dog [Max, a certified therapy dog] aren't meeting the demand, and depending on who you are—typically, I'd say the older demographic, it's not enough…Do you think a 50-year-old guy is going to go in to speak to a 25-year-old Peer Support person and tell them all about your problems? Unlikely, so that's not the Peer Support person's fault. I think the creation of these things has been awesome...I think we've realized through that there's still a greater demand for I don't want to say real help, but professional help." (P019)*
	Characteristics of Individuals	Knowledge and Beliefs About the Intervention	*"...that competitive advantage piece there, I think that's where we're at, is we value research. We are a very research driven organization. We are engaged with partners like yourself, because we know we can't just do it within, as there's expertise outside. I think the*

			other services certainly recognize that, because they come knocking on the door, and said, "What are you doing next?" or "How did you do that, as that first step?" (P022)
2) Buy-in and support from key leaders	Inner Setting	Leadership Engagement	*"Vary greatly. I think there are some people who are well aware, well-tuned in. They will notice when their staff are off-balance. They will notice if something has changed and they might just decide to reach out…And there's other people who can be clueless. Like somebody could say to their supervisor 'I'm going to go jump off a bridge' and they thought well, whatever. So, there is a great degree of variation in the understanding of the staff needs." (P009)*
	Process	Opinion Leaders Key Stakeholders Champions	*"I have absolutely the best ambassadors in the organization, which is the peer support team...I think the best approach is through those ambassadors is it's a team, maybe it's a select amount of them or the whole team through the coordinator is giving them the opportunity for that piece with their peers, because they're the ones you're touching base…it's that daily touch-base piece I think is really important." (P022)*
3) Internal support and receptivity to change	Inner Setting	Culture Implementation Climate Tension for Change Relative Priority Goals and Feedback Leadership Engagement Access to Knowledge and Information	*"I see there could be some possible [ways to reduce barriers]- as we move along with the clinic, there could be something that bubbles up. I'm most certainly open to discussions with the leadership team in regards to as these barriers pop up, is what can the organization do, or to be quite frank if we feel that is a conflict and that barrier has to remain, then at least we have that discussion. I think it's - a subject part 2 to that question is when we see the barrier, is what is this organization prepared to do to help break them down, and I can certainly tell you we're open to those discussions, and if we can't, we can't, but there's some things that we can do that we're certainly open to for sure." (P022)*
4) Benefits of organizational stability	Inner Setting	Structural Characteristics	*"One reason I don't want us to leave the city is when we're in isolation there was no place for people to go. Once we became part of the city, if people can't be a paramedic, they might move to bylaw. They might move to public health…people moved to all kinds of city departments doing different things. Never had that available before [prior to the amalgamation]. There was very little lateral movement or capacity to lateral move especially with operational injuries that made it to the point where they can't continue their original role. Being part of the city is a really huge opportunity to support the staff in that way." (P017)*
5) Access to care within the service	Inner Setting	Compatibility	*"I think it would fit really well…I think people are much more comfortable now with the issue, much more aware, much more conscious of the impacts on their work life and their home life and everything else. The system itself, in terms of the service and how we deal with things have kind of institutionalized having checks and balance on people in terms of their mental wellness during the work and after critical incidents and flagging things and getting people assistance. Just having one more toolkit that's available for people is part of that continuum would fit really, really well." (P017)*
6) Clinic's role in decreasing stigma and barriers to care	Inner Setting	Culture Available Resources	*"...denial, stigma, obviously. There's been a lot of work done through education, through testimonials to try to break down the stigma. There's still a lot of stuff that we do is stigmatizing...as simple as when you reach out to mental health, like a lot of paramedics don't see that as real work...They didn't go to school to take care of crazy people [on calls]...it reflects on themselves and others. Like their partner calls 1025, 'so another 1025, another idiot. What did he do? His mom didn't give enough attention. And then their partner's suffering beside them, like yeah, that's me.' So, you need, obviously, to continue that education part internally." (P009)*

	Characteristics of Individuals	Knowledge and Beliefs About the Intervention	*"I think impartiality is important, because…depending on the labour relations environment in the workplace, there sometimes can be a lot of suspicion that either management or WSIB or the employer, per se the city is only looking out for themselves, and not really the employee, and they just want to write them off as quickly as possible...that's one of the - been the long struggles I know for city EAP was people early on would label it as, "Well, that's part of the city, so there just going to tell management everything they need to." (P017)*
	Process	Engaging	*"...then you guys would have a course, like a 1-hour, 2-hour course on certain days. Our people should be able to come to that. It's about prevention as much as we can, right?...We should offer courses on that and your centre could be the centre that offers courses on that." (P019)*
7) Adaptations to increase feasibility and long-term sustainability	Intervention Characteristics	Adaptability Design Quality and Packaging	*"...if this clinic were to have, like a 24-hour kind of crisis, even someone to call. Maybe you don't come here at 3am but someone to call...would be super important, because you can't pick and choose when you're on the ledge." (P019)* *"There has to be a division between the employer and the mental health professionals. They can't be seen as an employer-related resource, to maintain some distance there between the treatment and the employer." (P016)*
	Characteristics of Individuals	Knowledge and Beliefs About the Intervention	*"...if they would come here [the clinic], you can direct them to the right resource. That would be a huge advantage. First responder centric, people would not come back from their appointment, I made my psychologist cry, which is something we hear fairly often...First responder centric, almost a seal of approval. I think that would be probably what would differentiate this clinic from everything else." (P009)*
8) Communication and engagement strategies	Inner Setting	Goals and Feedback Leadership Engagement Access to Knowledge and Information	*"Our Chief sent a memo out to all staff maybe six months ago was it that the funding for this was secure. Maybe it didn't even get to that, but that this clinic is a good thing. It will be implemented down the road and it's a positive step because there's so much talk these days about mental health and wellness in the workplace." (P019)* *"Training is obviously one thing. We are doing it. Give the tools to better understand and try to see some behaviour changes as being related to mental health rather than pure department…we're giving them the R2MR, the leadership portion to all the Superintendents, so they get a better understanding. And it's hard to change attitudes. They have to be inspired. If you want a change, they have to be inspired from the top down. I needed someone from Peer Support to do a debrief and I was told no, we don't have the levels. Went to the deputy chief—chief, I do have a problem here because I need somebody for Peer Support and they said they don't have levels. Well fuck the levels." (P009)*
	Characteristics of Individuals	Knowledge and Beliefs About the Intervention	*"That's your brand. That's basically how you're selling this clinic is we are there for you, specifically designed for first responders. So, since it's your brand, it's very important." (P009)* *"What I know is that it's being established for the purpose of serving first responders and it's exclusively, which to my understanding is a first and a departure from the availability of previous mental health supports which have generally been through general population employee assistance programs, WSIB, those kinds of avenues, so having the focus on first*

			response personnel, paramedic specifically, is something that's been a desired resource from the paramedics for as long as I've been involved with them." (P016)
	Process	Engaging Key Stakeholders Champions	*"These people would attend batch briefings in the morning before the officers deployed, and that in your faceness of it…made it very accessible, because they were there, and they were talking to you… I don't know if they were at every batch, but they were often there. For OSI to have all sorts of wonderful, smart people that are offsite somewhere, I don't know if the injured brain is working in that capacity to be able to reach out to that distance, whereas if the shrink standing in front of you…it's kind of - it's in your face...it needs to be - and even if once a week somebody's going to a different service just to sit on in, in on briefings every morning, and whatever to try and catch as many people as they can, and I think that education has got a big part." (P018)*
9) Importance of evidence-based practices and cultural competency	Intervention Characteristics	Evidence Strength and Quality Relative Advantage	*"...First responder centric, people would not come back from their appointment, I made my psychologist cry, which is something we hear fairly often...First responder centric, almost a seal of approval. I think that would be probably what would differentiate this clinic from everything else." (P009)*
10) Costs and potential consequences of funding and not funding the clinic	Intervention Characteristics	Cost	*"...there's a lot of willpower and there's a lot of traction at the moment to help first responders with their mental health, but like everything else, put your money where your mouth is. As much as a lot of people would volunteer their time to, eventually you need money to make this happen. So, I just hope that we can have sustainable funding, because getting it going is one thing, but keep the momentum and keep it going is another challenge. If you have funding for two years and then the funding runs out, so the clinic has to close, it'll be devastating." (P009)* *"…it speaks to the need for the clinic to be a permanent thing and not a temporary, "Oh well, we got funding this year, and now it's gone." You're almost better off not to even have it exist if it's not going to last, because it will have short-term benefit, but you're just getting people's hopes up. It really does at some point need to be a permanent long-term solution, so it can provide that long-term support, because people have long careers, especially in paramedicine." (P017)*
	Inner Setting	Available Resources	*"What do you require from the service? Do you require money? Do you require a space? Do you require equipment, ride-a-longs?" (P009)* *"So, infrastructure, I think one thing I know we have is there's cell phones in the trucks…and they have pre-programmed phone numbers…if this is up and going even during business hours, if it's 24 hours, whatever, that that number would have to be in the truck cell phones…that the crews could access…in real time, and very safely. Just walk away and take the phone while you're at the hospital." (P018)*
11) External influences of feasibility and long-term sustainability	Outer Setting	External Policy and Incentives	*"So, the union would have to do something they normally don't do and it's to advocate for a specific group of employees rather than the entire board collective. So, that would be a big thing if the union were to move ahead, that would be probably one of the biggest challenges that I foresee with the collective agreement. The rest, policies and procedures, it could be very easy. If we're going to give unlimited benefits specifically to first responders...I would easily frame it if you're covered under presumptive legislation, then it should be unlimited." (P009)*

			"...from a funding perspective when I talk about sustainability, from what I hear currently from the current [provincial] government, their mandate from mental health…From a mental health strategy from ministers has been very positive. One of the concerns that you will hear from my staff is from the regulation, so the Minister of Health himself and the division…is run by the municipality, funded partially by the province, and there's been discussion in the province so she could take us over - like upload us back, so that's prior to amalgamation in 2001. That would be a massive change, and I couldn't say how it would impact. It could just continue on the relationship piece, but certainly that would all have to be reviewed in regards to policy and procedures and methods and funding models and all those pieces." (P022)

Note. *Leadership Engagement* appears numerous times within the 11 themes, which highlights the importance and influence of authentic leadership engagement in supporting paramedic mental health.